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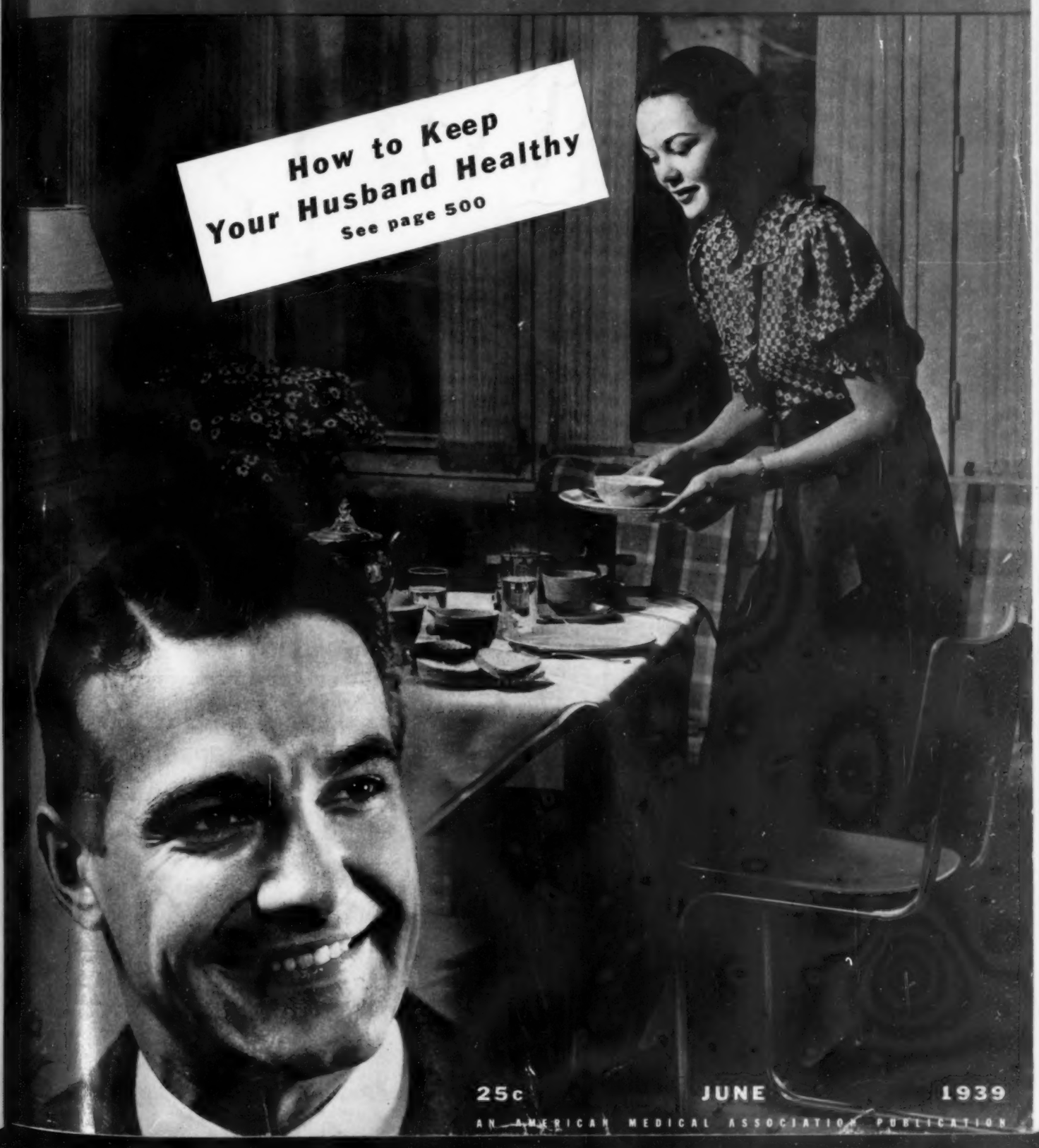
THE HEALTH MAGAZINE

HYGEIA



How to Keep Your Husband Healthy

See page 500

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JUNE 1939 Vol. 17 No. 6

HYGEIA

THE HEALTH MAGAZINE

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WHO'S WHO IN HYGEIA

LIEUT. WILLIAM H. BAUMER JR. declares that he has found being a jack-of-all-trades a big help in the Army, for his commands take him all over the country and sometimes launch him into several interesting positions. He received his appointment to West Point in 1929 from Omaha. After graduation, he was stationed for three years at Camp Dix, New Jersey, where he fed tens of thousands of CCC's and took up the role of suburban correspondent for the New York *Times*. Later he was sent to chase the mosquitoes out of northern Minnesota, then returned to teach history at West Point. He is 29 and married.

J. A. MYERS, M.D., Ph.D., estimates that in recent years he has traveled a quarter of a million miles throughout the United States lecturing on diseases of the chest. His average is 200 lectures a year for the program of popular education on chest and lung diseases he is helping to conduct. Last October, his travels took him to Cordoba, Argentine, South America, to the National Congress of Medicine; flying the whole distance from Minneapolis—15,000 miles—he made the trip in only fourteen days.

HOWARD DITTRICK, M.D., is a professor, an obstetrician, a museum curator and the father of seven sons! He is the senior clinical instructor in gynecology at the Western Reserve University and the director of the museum at the Cleveland Medical Library.

PHILIP C. JEANS, M.D., is a member of the Council on Foods of the American Medical Association and has done original research on vitamin A, vitamin D and calcium metabolism during the growth period of children. At present he is professor and head of pediatrics at the State University of Iowa and pediatrist to the University Hospitals.

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HYGEIA, The Health Magazine, is published monthly by the American Medical Association, 535 North Dearborn Street, Chicago, Ill. Yearly subscription price, $2.50; for foreign postage add 75 cents. Single copies, 25 cents. Volume 17, Number 6. Entered as second-class matter March 21, 1923, at the postoffice at Chicago, Ill., under the Acts of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1,103 Act of October 3, 1917, authorized March 21, 1923.
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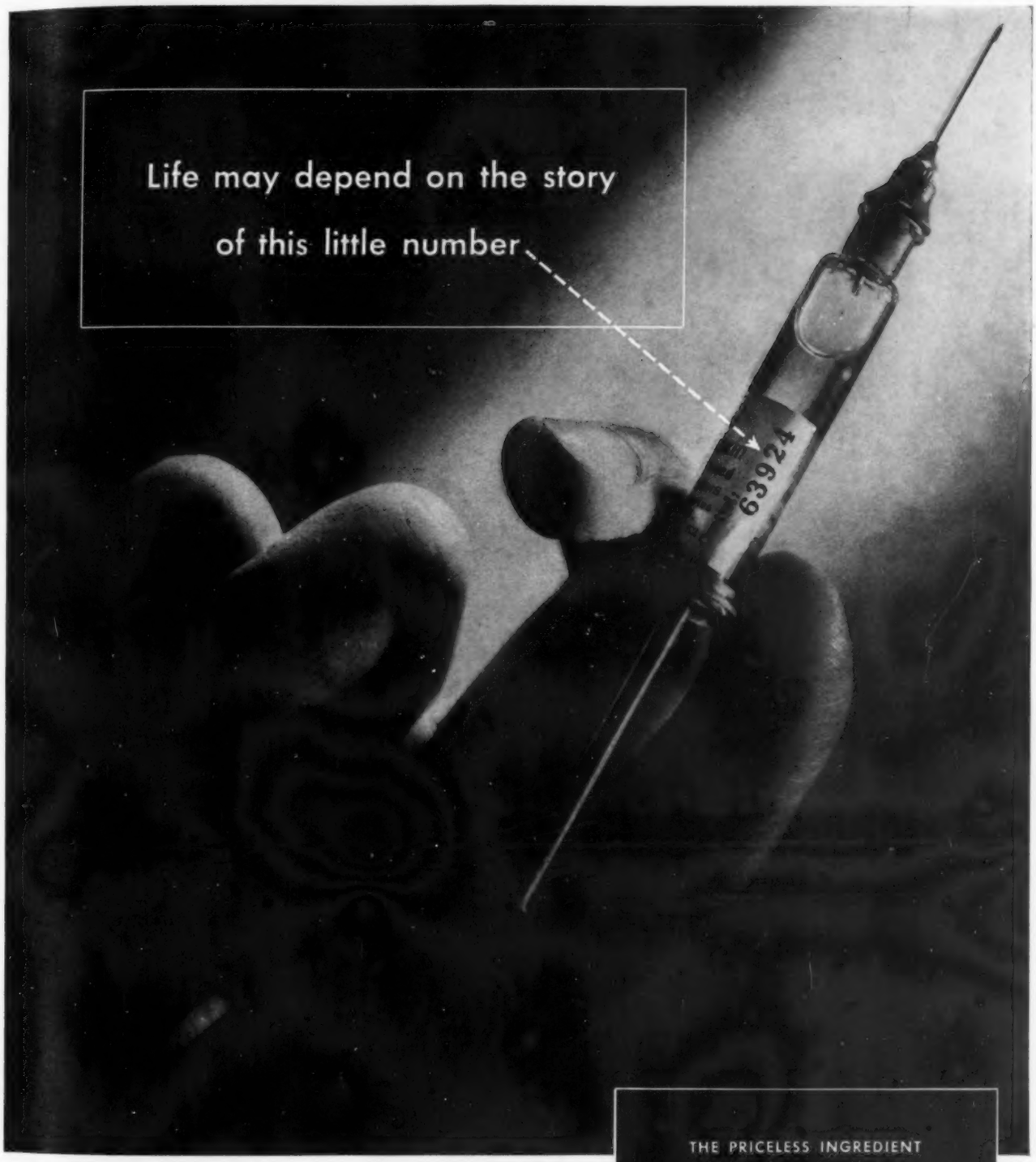

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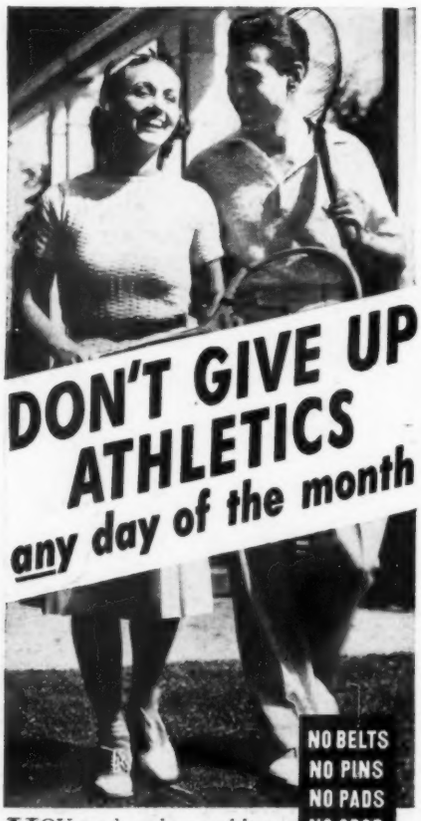

YOU need not be an athlete, however, to appreciate what a blessing Tampax is to all classes of women—housewives, travelers, students, business girls. The Tampax principle of internal absorption, long known to doctors, has already led women by the million to throw off old restrictions and adopt this new method of monthly sanitary protection.

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LETTERS FROM *Readers*

Compliments

To the Editor:

I enjoyed my first copy of HYGEIA. The magazine is not unfamiliar to me, but I never opened it because I was under the impression it was for the medical profession only. The articles are interesting and instructive and cover a variety of subjects which should enable us to preserve that most precious possession—our health.

MILDRED G. PAGE
Henrotin Hospital
Chicago

▲

Portrait of a Physician

To the Editor:

March wind and sunshine flooded the long front porch. "Just right for a snapshot," I thought. And so I opened the office door, called back to the consultation room, and presently, one hand resting on an adjacent concrete pillar, the kindly acquiescent old doctor posed for me on the steps outside.

An incident of years ago, that casual snapshot still epitomizes for me the best that men in all ages and all lands have learned about their medical brethren. Eighty-one winters—fifty-five of them spent in care for the hurt and ailing—had whitened his hair but had done little to alter his spare, 6 foot stature or slow his even step. Much they had done, however, to deepen the kindliness in the keen, blue eyes and to increase the gentleness of hands always gentle from the beginning. Fittingly, perhaps, strong porch shadows veiled the doctor's name on the glass panel behind him; but significantly, bright sunlight just underneath it boldly emphasized the single word "Office."

Certainly, if any office deserves letters of gold for such passing tributes as this, it is the physician's. An office at once idealistic and practical, selfless, scientific, singularly uncelebrated, yet in many an honest opinion, nearest to being the acme of helpfulness of any calling that men can practice. Through the deadest hour of night or heaviest downpour, over the longest stretches of country mire and to the meanest hovel of a farmhouse, I have seen this faithful follower of Aesculapius hurrying to the summons of pain, sorrow and anxiety. And I have seen, too, the radiant smile of relief kindled at countless lamplit doors by some watcher's cry of "Mary, the doctor's here!"

Not long after, at 83, my old physician friend found another Lamplit Door waiting for him. But it did not find him idle: He was still writing prescriptions for patients he could no longer attend in person. And it seems good to remember the fact now, not for himself alone, but for the profession he so jealously upheld throughout a long and diligent life. Wealth he did not have; but a whole county mourned at his graveside. No institution perpetuates his fame; but thousands in the town of his lifelong practice still affectionately speak his name.

Medicine, in the half-century span of the old doctor's service, made mighty and lengthy strides. Each one brought him joy. And when, shortly before his last and only major illness, I asked him whether he would study medicine again, had he his life's way to retravel, he smiled. A rather superfluous question—to him. "Son," he said, "I would never study anything else!"

CALEB
Marshall Field & Co.
Chicago

A World is under her Thumb

A FEW DAYS AGO, this young woman was trying to run a home and manage two lively children from a sick bed.

Even though she felt decidedly ill, she was struggling to play the combined roles of housekeeper, mother, wife, and patient. Naturally, she was making a success of none of them. Moreover, she was making her illness worse.

Now, however, everything is changed. On her doctor's orders, she has come to the hospital. She is still ill, but her worries and responsibilities have fallen away. Now she can concentrate on the business of getting well. Now *she* is the one to be looked out for, the one to be considered and watched.

Most important of all, she is now in a position to be aided by all that medical science has evolved for the cure of illness. When she presses her hospital call bell, she has—literally and figuratively—a world under her thumb.

For a hospital is actually a little world itself—a world which, from basement to roof, has been planned for the effective care of the sick. Here modern medical and surgical equipment are available at all hours, and internes and nurses are ready to carry out any treatment her doctor may order. Here are pharmacists, laboratory workers, and dieticians—all ready to contribute their skilled services to speed her along the road to recovery.

When she returns home, mentally refreshed and physically well, this young woman will have a new understanding of what a haven of help a hospital really is.

Perhaps *you* don't realize the great advantages of hospital care. Perhaps, in the past, you even argued against someone's going to a hospital. If so, visit your hospital—see for yourself what a wonderfully efficient, sympathetic organization a hospital really is. Inspect the equipment that makes possible some of the modern miracles of healing. You'll come away feeling thankful that your community offers such a house of mercy.

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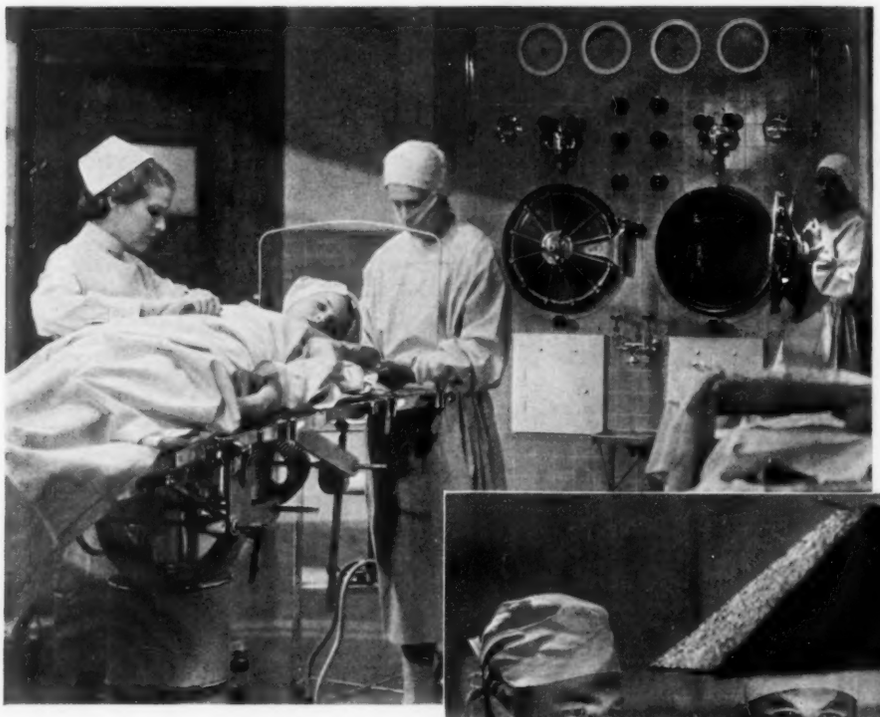
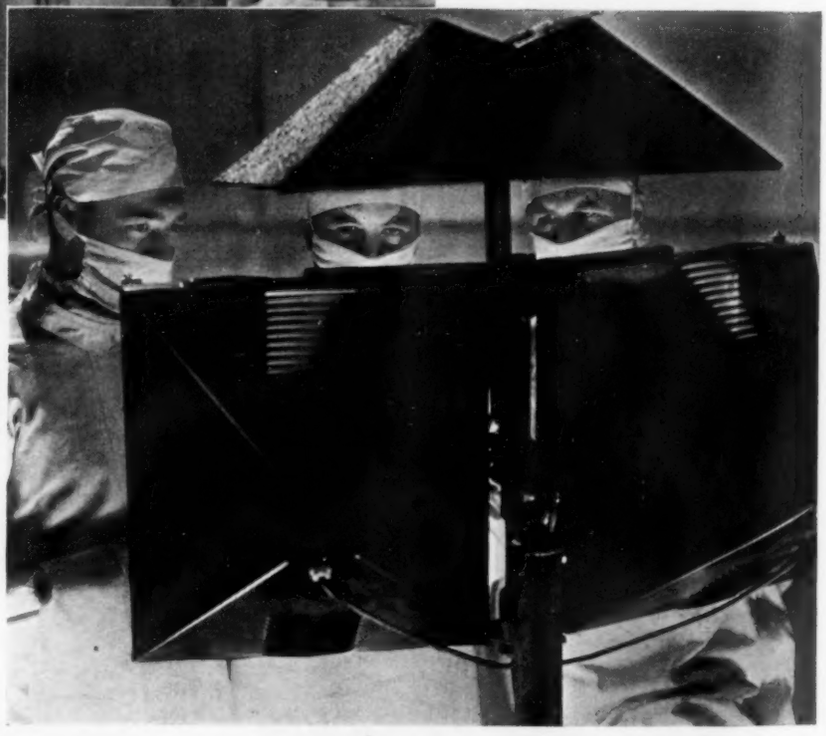
The World's Largest Makers of Pharmaceutical and Biological Products

SEE YOUR DOCTOR



Scenes from "A Doctor's Diary" are shown at left and just below. One medical society described this picture as a malicious attack on their profession. It portrays the staff of a private hospital as a crew of vultures.



In "Wife, Doctor and Nurse" featuring Warner Baxter, Virginia Bruce and Loretta Young, the triangle of love and intrigue finds a setting in the modern hospital. Below, right, Edward G. Robinson is "an illustrious surgeon" in "The Amazing Dr. Clitterhouse" and has a scientific interest in crime. He is finally proved insane by a trial jury.

MEDICINE in the MOVIES

DRAMA is the enactment of conflict. Especially dramatic is the conflict of man with disease, a war that has endured since the beginning of time. Death itself has never been conquered; none of us lives forever. The motion picture translates the drama of human life to the screen. Hundreds of thousands of people assemble daily and nightly to see recapitulated in the lives of others the drama of their own existences. Medicine has been a fertile field for the production of scenarios. Recently many a medical motion picture has been among the leaders in public interest. Significant were "The Life of Pasteur," in which Paul Muni dramatized the investigator in the laboratory, and "Arrowsmith" which revealed the great war on plague and epidemic disease. Equally significant are those motion pictures which depict the life of the general practitioner. In his office the doctor sees the flotsam and jetsam of medical practice. The specialist is concerned with the fine procedures which are the outgrowth of recent advances in medical science. Much discussed now is "Dark Victory," in which Bette Davis and George Brent combine to wring the hearts of the audience with the story of a doctor's unsuccessful battle against death for the woman he loves!

Unfortunately in many motion pictures we see too great a departure from reality. No doubt, for purposes of drama, the writer and producer are warranted to take some license with pure fact. In many a great picture this was hardly necessary, notably in "Men in White," which depicted problems of medical practice, and in "Private Worlds," which was concerned with the change that has taken place in the modern care of the insane. In "Dark Victory," however, the girl suffers with some sort of brain tumor, not to be found in any of the records of brain tumors known to medical science. The public is given the impression that after an operation for tumor of the brain the patient may then be given a definite time in which to live and that recurrence will take place without any symptom except sudden loss of sight; after that, death is supposed to follow in twenty-four hours. This was perhaps necessary for timing and emphasis in the drama but may give many a patient with a brain tumor and the families of many such patients hours of unnecessary anguish.

Although motion pictures have studiously avoided propaganda, the medical field has of late been more subject to propaganda than any other type of motion picture dramatization. True, the picture called "Blockade" emphasized the sufferings of the civilian population in war; there have been other pictures which also depicted the horrors of war so reliably as to make them documents in favor of peace. An occasional picture has emphasized the horrors of crime; yet in many instances pictures concerned with crime have made it unnecessarily simple and attractive. Not long ago a motion picture called "A Doctor's Diary" was produced. One medical society described the picture as a malicious attack on the medical profession. The critics pointed out that the

author's conception of the code of ethics was absurd and that the picture attempted to portray the staff of a private metropolitan hospital as an avaricious crew of vultures who are defied by a temperamental nurse and a heroic intern who is shot by the aggrieved mother of a child prodigy during a suit for malpractice.

In the motion picture called "The Citadel" the producers lent themselves to the campaign in behalf of the socialization of medicine without, however, accomplishing much in that direction. This aspect of the picture was so completely confused with some of its other features that few observers even remembered it.

Here are "stills" from motion pictures showing many aspects of the life of the physician. The motion picture which made the greatest impression on the medical profession as an accurate picture of the life of the family doctor with all of its devotion and services to mankind was called "A Man to Remember."

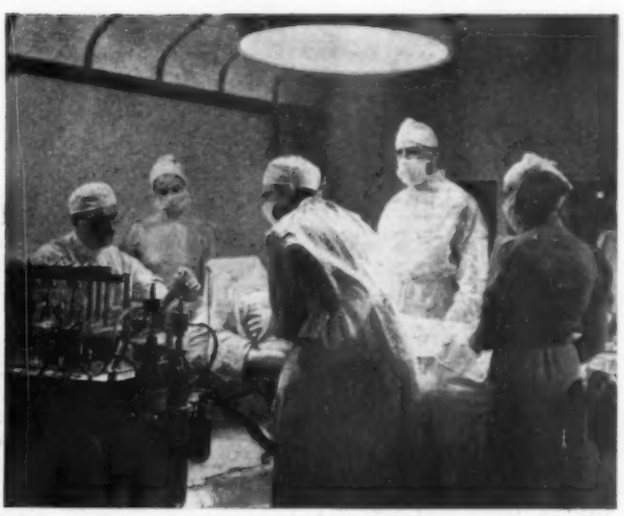
Many of the studios now have available competent consultants to assist them in portraying medicine properly to the public. The motion picture might be a great force for dramatic education of the public in regard to disease and health and in the campaign for good medical service. What a pity that producers have not seen the possibilities and utilized the public's interest for this purpose!

Internship has its amusing minutes in "Calling Dr. Kildare," soon to be released. But that is just a prelude to the detective work Lew Ayres as Dr. Kildare is called on to perform. He extracts a bullet secretly and helps locate the murderer—all in the line of "duty."

In "Internes Can't Take Money" one of them is forced to leave training; this movie also calls for crime interest.

"A Man to Remember" impressed the medical profession with its accurate portrayal of a family doctor.

Events in the life of a nurse are depicted by Loretta Young in "The White Parade."



"The Citadel" campaigned unsuccessfully in behalf of "state" medicine.

Chester Morris, as Dr. Craig in "Pacific Liner," encounters cholera and mutiny in the ship's hold.

"The Country Doctor" shows an unknown physician whose life work was suddenly transformed with the coming of the quintuplets.

By LOIS MATTOX MILLER

"HAIR-BRAINED" NOTIONS

MOST of the beliefs people have about their hair, such as how to take care of it and how to keep it on their heads, are unconfirmed by the results of laboratory tests and the research of specialists in the skin and hair. For instance there is the popular fear that exposure to sunlight will raise a crop of superfluous hair and the delusion that it will perform miracles for those who are bald. These myths were exploded a few years ago by a remarkable series of experiments on hair growth conducted by Drs. C. H. Danforth and Mildred Trotter at the Washington University School of Medicine. Late one spring, the scalp and body hairs of twelve college girls were microscopically examined and counted. All summer the girls basked in the sun. In the autumn their bodies, now burned a deep brown, were minutely reexamined. Now careful comparison by the microscope showed that the prolonged baking had had no effect whatever on the growth, in number or texture, of the hair on the parts exposed.

The same investigators also performed a valuable service when they disposed of the common belief that shaving causes hair to grow out thicker and more bristly than it was before. This is merely a superstition which makes women turn to sometimes harmful chemical depilatories and men keep their razors away from the fuzz on cheekbones! Drs. Danforth and Trotter had three girls shave their left legs, from knee to ankle, twice a week for eight months. Twelve men also volunteered to lather and shave the left side of their brawny chests daily for five months. In each case, when the hair had grown out again, microscopic comparison of left with right legs and chests showed that shaving has no noticeable effect. The illusion of a stubble, when hair sprouts again after shaving, is caused by the changed ratio of the hair's diameter to its length. If allowed to grow, the steel bristles on a morning chin eventually become a silky beard.

The moral here, for women, is that shaving is safer than depilatories, scraping the skin with pumice stone or emery boards, or resorting to hair removers, whether of the chemical or wax variety, which may cause severe skin infections. The one safe method of permanently removing the hair, electrolysis, is expensive and should be entrusted to only an expert, with the knowledge of your physician.

Another widely current myth is that singeing "seals" the ends of the hair and prevents the escape of its "vital fluid"; the hair has no more sap than a buggy whip! Wearing tight fitting

hats all your life will not necessarily produce baldness. Some people believe the hair should be shampooed as seldom as possible because any kind of moisture is harmful; they believe that absolute cleanliness achieved by washing the hair twice a week or even daily helps the scalp to "breathe"; that massaging loosens the hair; that massaging with electric vibrators and new-fangled vacuum cups somehow strengthens it.

Sound research has been exploding these myths, one after another, for years; but fur-bearing humans have not been listening. To eminent dermatologists who have made a life-long study of the human hair, the layman's lore sounds like a mixture of witchcraft and commercially fostered ignorance. They say that the only persons who profess to know more about the hair than experts do are the laymen who neglect it and lose it. They are aghast at the dogmatic assertions they read and hear about what should or should not be done to a scalp gone as bald as an apple. And so, while candidly admitting the limitations of their own knowledge, these experts deplore the millions of dollars spent annually on hair tonics, baldness remedies and expensive "hair growing" treatments in the belief that the human scalp can be cultivated like a tract of arable land.

Our hair is not an independent living structure growing out of the skin as a wheat stalk grows from the earth. Like finger nails or toe nails, hair is simply another form of the horny layer of the skin itself. Hair does not "breathe" like a plant, nor does any "vital fluid" flow through its shaft. Each hair grows up from a tiny papilla that lies deep in the corium, or body of the skin, and over which the hair end fits like a cap. Growth pushes the hair upward through a firm tubule, or follicle, which shapes it into a strong slender shaft. For a very short distance above the papilla it is a succulent, living tissue, similar to the deeper layer of the skin itself. But beyond that point it is lifeless—a tough bristle of insensitive horn.

Dr. Hans Friedenthal's count of the hairs on our head, accepted as approximately correct, is 88,000 for redheads, 102,000 for brunettes, 104,000 for blondes. Normally each of these hairs has a life of from six months to four years, after which it becomes detached from the papilla and falls out, to be replaced by a new one from the same papilla. This is the normal cycle of hair growth, until interrupted by sickness, disease or complications resulting from neglect or abuse. So a moderate amount of hair shedding, particularly in the human "moulting seasons" of spring and summer, need cause no alarm. One can safely lose as many as 50 or 100 hairs a day.

There are plenty of men and women who are sure that shock, fright or worry can make the hair turn white overnight; and many of them feel equally certain that some brand of "hair restorer" will bring back the original coloring of the hair quite as mysteriously. They are wrong.

The hair derives its color from pigment granules present in the microscopic cells of the shaft itself. Normally in later life, or prematurely in many cases, this natural supply of pigment in the hair-making apparatus may diminish, and the hair turns gray; or when the pigment supply is exhausted entirely the hair becomes white. Ordinarily this phenomenon is attributed to senility or an inherited characteristic, but there seems to be some basis for the recognition of worry and nerve strain as contributing factors. However, there is no case on record of hair turning white "overnight," and the doctors generally consider this to be a popular superstition.

Once the hair loses its color there is no means known to science of restoring it. So-called "hair restorers" are nothing more than dyes, and as such are to be regarded with suspicion. For while certain vegetable dyes—henna, indigo and walnut juices—

If he shampoos his hair regularly . . .

brushes and massages it vigorously . . .

keeps away from tonics and cures . . .

he can face himself in years to come with a well groomed head of hair!

may be harmless, they are difficult to apply and are effective for a short time only. The dyes of the aniline and metallic types may be harmful to the hair and scalp and have been known to cause serious systemic poisonings. The doctors say that the best thing to do about gray or white hair is to admire it!

Dermatologists still don't know all the factors involved in making hair grow, and our scalps conceal some of the most baffling enigmas in medical science. But that is no reason for clinging to superstition, which contributes to lackluster appearance or baldness. So the dermatologists urge us to save time, hair and money by learning a few vital facts and following a few simple rules.

Doctors recommend that we (1) shampoo the hair regularly; (2) brush and massage the scalp vigorously every morning and evening; (3) never allow it to get too oily or too dry; (4) shun "tonics," dandruff "cures" and treatments not specifically recommended by a dermatologist.

Take warning from dandruff, probably the commonest affliction of the hair and a contributing cause of baldness. Seborrheic dermatitis, the doctors call it. Occasional small flakes that appear in the hair are bits of dead skin naturally shed, but the unsightly scurf popularly called dandruff means that bacteria (about whose identity there is some disagreement) have attacked your scalp. Usually they will succumb to a shampoo made of tincture of green soap (U. S. P.) instead of toilet soap. Avoid "dandruff removers" and "dandruff shampoos," which sometimes contain arsenic. If the condition persists, consult a doctor. And don't try cures recommended by your barber or your friends.

Keep your hair neither too oily nor too dry and always clean. Shampoo it carefully at least once a fortnight, using a pure toilet soap and water. Prepared shampoos at best are nothing more than that; at worst they may contain borax or alkali—both sometimes irritating to the scalp. After shampooing, rinse and dry the hair carefully, if possible in the sun. After a swim, wash out the sand and salt, then dry your hair with a towel. The male habit of wetting the hair in order to comb it down is considered by some a possible contributory cause of baldness.

A *moderate* amount of sunshine will do the hair no harm and may even be beneficial, the doctors say. However, exposure outdoors may require more frequent shampooing.

Vigorous daily brushing is good, because it stimulates the sebaceous glands, which lubricate the hair in the follicle below the skin surface, and it makes the hair glossy by distributing the natural oil. This oil is external and not, as barbers love to tell you, a "vital fluid" which can be "sealed" in by singeing. Even when the hair seems too soft and unruly after a shampoo, a few vigorous brushings should give it a nice sheen and keep it in place. If it still seems too dry, a little petrolatum, olive oil or sweet almond oil may be rubbed in. Or, if it is too greasy after the shampoo, wet the hair with alcohol and rub off quickly before it evaporates.

Massaging is excellent, when correctly performed. Don't rub the scalp violently, or you will merely pull out the hair. Press the scalp with the fingers, and move it about firmly over the skull, thereby stimulating not only the scalp but the underlying fatty tissue which separates the scalp from the skull.

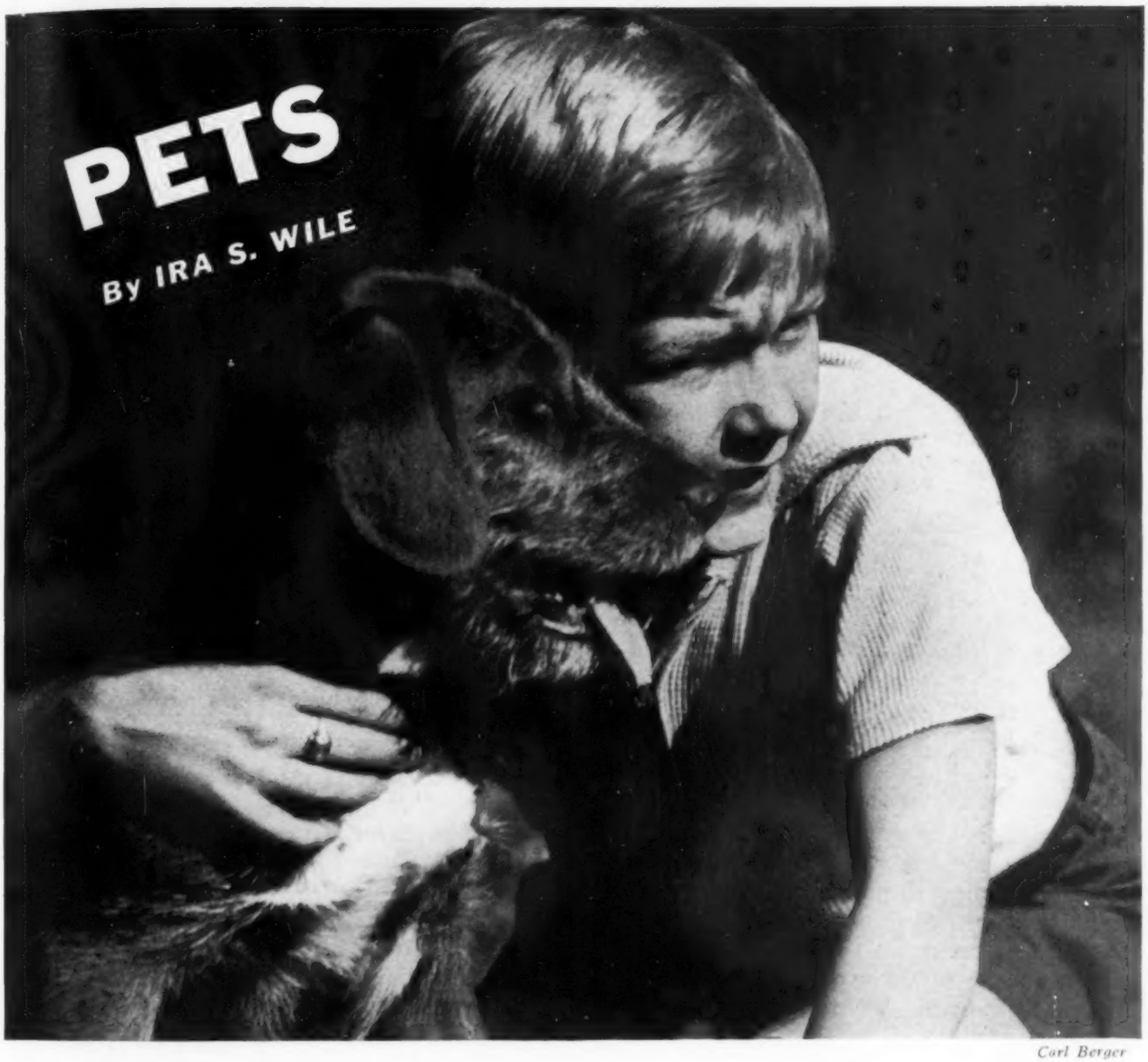
Popular explanations of baldness range from hats and sun (or not enough sun) to the superstitions that it is caused by emotional disturbances or "cerebral heat created by thinking." The best medical explanation of baldness (even though it does not reveal the curable cause) is that the subcutaneous fat, prematurely in middle age, or naturally in old age, gets thinner and disappears. The scalp becomes more tightly attached to the skull; with the shrinking of the scalp the hair follicles close up and gradually vanish, and baldness sets in—usually on the top of the head where the tension of the skin is tightest. Except in rare cases women do not become bald, according to this theory, because their hair, like a man's beard, is a secondary sex characteristic, and because their layer of subcutaneous fat is much thicker than a man's and atrophies, or wastes away, much later in life.

Baldness is of two different types. One type, symptomatic alopecia, accompanies a variety of diseases. The hair falls out entirely or in patches. When the disease is cured, the hair often grows in again as mysteriously as it fell out. The claims of success made by baldness remedies are founded on such cases; the hair would have returned even if no remedy had been applied.

The other type, "common" baldness (alopecia senilis, baldness from old age, or alopecia prematura, premature baldness) is still a profound puzzle. Most dermatologists believe that, while much may be done to prevent or at least forestall it, nothing known to medical science will cure common baldness once the hair is gone. There is much evidence that this scourge is hereditary and that the tendency can be passed on not only by a bald father but, from her side of the family, through *(Continued on page 545)*

PETS

By IRA S. WILE



Carl Berger

"IDEAL parents," as judged by their children, turn out to be the ones who treat children reasonably and without undue emotional stress. This includes the idea that ideal parents recognize childhood's point of view. Children are people with ideas and purposes of their own. They wish to respect their parents but can do so only when their parents respect them.

Many parents try to make pets of their youngsters and then fail to understand why pets mean so much to the young. Dogs, cats, rabbits, birds, ponies, sheep, pigs, snakes, fish, frogs, ants, worms—any living animal plays a constructive part in the life of a child. The ideal parent understands their value.

The love of animals may be part of man's expression of unity with all life. The daily care of a dog or bird, or the expression of interest in a white rat or a salamander, has values beyond the mere interest and occupation. It is a source of education in life—in the nature and meaning of assistance to the weak, in a willingness to find pleasure in service to others.

Pets are educational materials, which promote happiness and lead to growth through developing personal kindness and effort. Keeping pets is to be encouraged. The child develops more from running with his dog and training it to fetch a stick than from being overprotected at home. He acquires a deeper emotional understanding of life from the response or devotion of the chosen pet than from the unwelcome fondling that babies him. Owners of pets are learning a lesson in affection that cheers home life.

"Love me, love my dog" applies to the child attitude toward all pets and parents. A pet is a tame animal, and children are glad to tame themselves through their pets.

SEE FOR YOURSELF—

By RICHARD F. TRUMP

ALL YOUR LIFE, if you're a normal human being, you've been taking some other person's word for it! Perhaps you'll never have a chance to prove that the world is round; but with a little time you can have the thrill of making some real discoveries about your own mind and body.

Probably you won't achieve fame with your discoveries; but at least you'll have some fun and learn more about how your body works. Your eyes will be a good place to begin. After you have tried an experiment, ask some friends to try it too, and see whether they have similar results. When you are satisfied that your results are not accidental, try to explain what you have observed. Then turn to the explanation following these experiments, and check your conclusions.

1. Roll a sheet of paper into a thin tube, and with the right eye look through it at some object across the room. Leave your left eye open. Now move your left hand along the side of the tube, with the palm toward you. What happens? Now try your left eye and right hand. Try to explain it for yourself before you turn to the explanation.

2. While focusing your eyes on a distant object, touch together the tips of your two index fingers, about 6 inches in front of your face. Then slowly draw your fingers apart. Do you see the extra finger floating in midair?

3. Here is an experiment that will help you understand how your eyes automatically adjust themselves to different intensities of light. Stand before a mirror in a dark room, and suddenly flash a bright light in your eyes. (A flashlight works fine.) What change did you notice in your eyes? Now turn the light so it does not shine directly in your eyes. What happened? Before turning to the explanation, decide how this principle is important in highway safety.

4. While looking in a mirror, with moderate light, pinch yourself smartly somewhere around the nose. Try pinching other parts of the body, and see the effect of pain on the eyes.

5. On a sheet of white paper make two heavy black spots, about 2¾ inches apart. Hold the paper about 6 inches from your face; close the right eye, and look *steadily* at the right-hand spot. Now, keeping the spots horizontal with the eyes and staring at the right spot, slowly move the paper away from the face. At some point the left spot will probably disappear, only to reappear when you have moved the paper a little farther. Experiment for a while by trying the right eye also.

6. Place a piece of brightly colored paper or cloth on a background of white paper. The colored piece should be several inches across and of one color. In good light stare fixedly at a point on the colored piece for ten to fifteen seconds. Then take away the piece, and stare at the white paper for a while. If you see nothing peculiar after a few seconds, rest your eyes and try again, staring longer at the colored piece.

Try various colors for the object and background. Can you predict the results? Perhaps you'll think of everyday experiences which illustrate this principle.

7. Stare at the bright piece on the white background until you see a fuzzy "halo" around the edges. Notice the color of the "halo," and explain the cause.

8. Close one eye, and stare at a bright light until you become accustomed to it. (Never look at the sun or any other *very* bright light without the protection of dark glasses.) Now look at a light colored wall, using one eye, then the other and finally with both eyes. What differences do you observe?

9. Most of us have at some time been struck hard enough on the head that we "saw stars." Try to explain the stars, and then refer to the answers.

EXPLANATION—

1. *Why did you see the hole in your hand?* To make the explanation clearer, try this: Without the tube, focus your eyes on a distant object, and then hold your hands side by side, about 6 inches from your face; your hands seem to overlap because the eyes are not focused on them. For the same reason, when you look through the tube with your right eye, the left one (focused on the distant object) misplaces your hand as you hold it beside the tube. And since your brain does not correct the error, you see a hole through the palm of your hand. If you were able to focus one eye on a distant object and the other on your hand, there would be no such illusion.

2. *Why do you see the floating finger?* The principles of the first experiment also explain this one. Both the right and left eyes offset the fingers, misplacing them toward the inside. The curious overlapping creates an extra finger, which is detached because each eye sees through at one side, just as you saw through your hand in the previous experiment. Notice that if you focus on your fingers rather than on a distant object, the floating finger disappears. Also, if you shut one eye there is no illusion.

With our binocular vision we see two views that are almost the same. Many animals see entirely separate views with their two eyes; but because our views are just slightly different, we are able to see depth, the third dimension, more clearly. To realize how much you depend on your two eyes, try touching two pencil points together at arms' length when you have one eye shut. Is it easier with both open?

3. *How does the eye adjust itself to varying intensities of light?* You probably noticed that the colored muscular sheath, called the iris, contracted so that less light got through and hit the retina. This "pupillary reflex" is controlled by involuntary nerve action and occurs in infants only a few hours old. It is a protective device, and without it we would be even more seriously blinded by bright automobile lights.

4. *How does pain affect the eyes?* Pain, especially around the nose, causes dilation of the pupil. So does epinephrine, the secretion of the adrenal glands, which are believed to be especially active when you are afraid or angry. The oculist dilates your pupils with chemicals in order to examine your eyes in a relaxed condition.

5. *Why did the spot disappear?* The only parts of the eyes which receive visual sensations are the tiny nerve endings called rods and cones, located in the retina. Each rod and cone is the termination of a nerve fiber, one of the strands of the large optic nerve, which enters at the back of the eyeball. At the point where the optic nerve enters and sends off fibers to the retina there are no rods or cones, and hence there is no sensation for the light which happens to focus on this blind spot. In your experiment the mark disappeared, because in that position the light coming from the mark was focused directly on the blind spot of your eye.

6. *Were you just "seeing things" in this experiment?* That's exactly what happened; you saw something that wasn't there! Probably every strong sensory impression produces a slight "after-impression." These are most evident in vision and are called after-images. You probably noticed that the after-image was always opposite in brightness and complementary in color to the original sensation. Thus, a bright red impression produces a dull green after-image. It is said that after-images change rapidly in color, covering the whole spectrum; but one color, the complement, is always dominant.

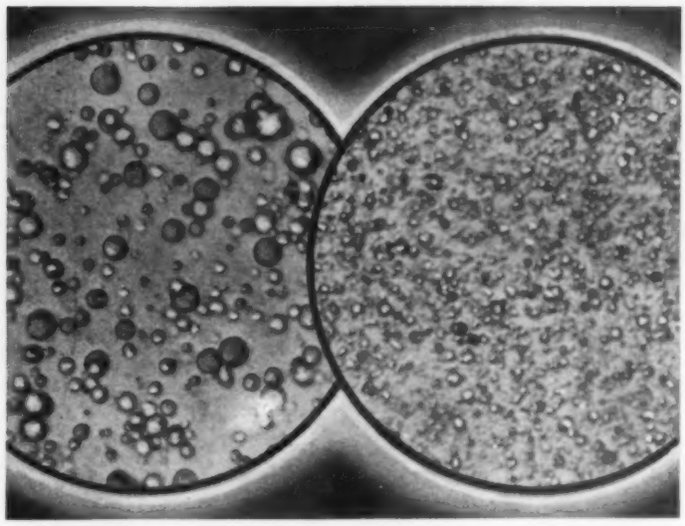
With after-images, everything we see is changed slightly by what we saw a moment before. But we learn by experience to ignore our tendency to see things that aren't there.

7. *Why do you see the "halo"?* When you stare at an object your attention soon wanders. And as the focus of your eyes changes, you see the white background colored around the edges by an after-image of the object.

8. *Why does the wall appear brighter with one eye than the other?* This experiment illustrates the fact that the strength of the sensation you receive is not always proportionate to the strength of the stimulus. Because of contrast, the retina which has recently been exposed to bright light sees the wall considerably duller than the other eye does.

9. *Why do you "see stars"?* The optic nerve, like all others, carries only one kind of sensation. Whenever the optic nerve is stimulated in any way—by electricity, by touching or by light waves—we have the sensation of vision. When you are struck on the head, the optic nerves or the visual centers of the brain are stimulated so that you "see" the bright flashes which you call stars. This tendency for nerves to carry only one kind of sensation or message makes it possible, by artificial stimulation, to determine exactly what part of the brain receives the various sensory messages.

HOMOGENIZED MILK



By PHILIP C. JEANS

The tiny particles or globules of fat in milk are broken up into even smaller droplets by homogenization. These pictures show the relative size of the fat globules before and after going through this process.

WHEN milk is delivered at the door in its usual natural state, it has a layer of cream at the top of the bottle. The depth and richness of the color of this layer has served, sometimes erroneously, as a means of judging the quality of the milk. At times, the cream is remixed with the remainder of the milk; at other times it is poured off for table use. A dairy practice increasingly employed is the processing of milk in such a manner that it becomes homogeneous, meaning the same throughout. When this is done, the cream does not separate; the milk at the bottom of the container is as rich as that at the top. Milk treated in this manner is known as homogenized milk.

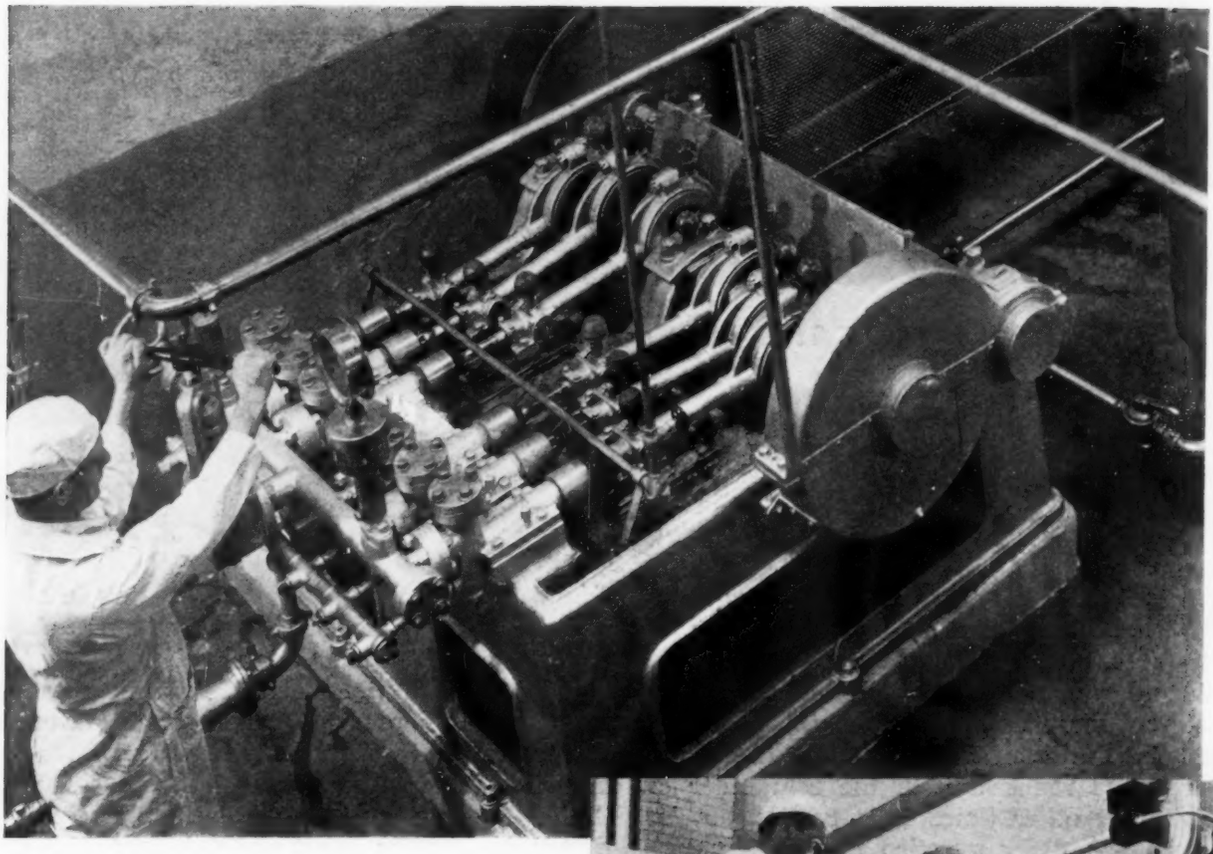
The most obvious effect of homogenization of milk is produced on its fat content. The fat of natural milk is in small globules or droplets, which are so tiny that they can be seen only with a microscope. At least 4,000 of them would be required to extend the distance of an inch when placed side by side. Despite this relatively small size they easily become grouped and rise as cream. But the process of homogenization breaks these globules into particles so much smaller that they must remain distributed evenly throughout the milk.

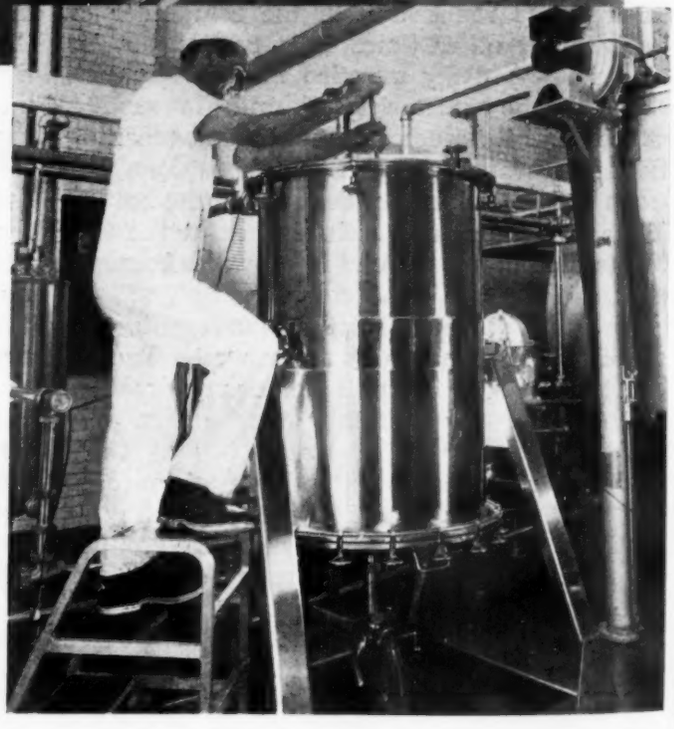
The common method of homogenizing milk is to force the milk through a narrow opening at high pressure by means of a cylinder pump; the greater the pressure, the more marked the effect. A low pressure rotary pump also has come into use recently. Rapid vibration of a thin layer of milk passed over a diaphragm is still another new method for diffusing the fat in the milk; the product of this process is called sonized milk.

The most effective as well as the most commonly used homogenizing machines have a group of three to six pumps operating in succession, much as the cylinders of an automobile operate, which maintains a uniform flow of milk at a high pressure. The milk escapes from this high pressure compartment through a valve controlled by a strong spring. Changes in the spring pressure control the pressure of the milk in the compression compartment. Depending on the effect desired, this pressure may be from 500 to 4,000 pounds to the square inch.

High pressures move the thin stream of milk through the valve as fast as a mile a second; the fat globules strike the side walls of the valve with shattering and atomizing force. Homogenization is aided also by the violence of the eddying currents near the outlet valve. For satisfactory homogenization the temperature of the milk must be above the melting point of the fat. Dairies differ in their choice of temperature; but one commonly used is 145 F., the temperature of pasteurization. When the higher pressures and temperatures are used, the fat globules may be expected to have about one-sixth their former diameter. This means that the number of droplets is increased more than 200 times, and the exposed surface of the fat is increased approximately six times. This change in size has several striking effects on the properties both of the fat and of the milk. The droplets no longer rise to form cream but remain evenly distributed throughout the milk. When the higher pressures are used for homogenization, the fat remains distributed in this manner for a time far longer than the period that fresh milk will keep.

Therefore, homogenized milk cannot be used as a source of cream for the breakfast cereal and coffee. Perhaps some housewives would consider this a disadvantage. The cream line





Above, a homogenizing machine of the high pressure type propels milk through openings only one ten-thousandth of an inch in diameter. The milk strikes the sides of the six valves at the shattering and atomizing force of 1,500 pounds of pressure per square inch. Right, an operator is controlling the flow of milk in the soft curd process. Pure fresh cow's milk is first treated with citric acid, then allowed to flow through a bed of synthetic zeolite, called "Lacto-Crystalite." Pasteurization and cooling by the usual methods conclude this process. The curd tension is reduced to zero, when tested one hour later.

is no longer a reliable guide to the quality of the milk. However, this should not be a disadvantage. Quality of milk depends on many factors other than the amount of cream. Cleanliness and the efficiency of pasteurization are more important, and for these unseen and usually undetectable qualities the honesty of the dairyman must be trusted. He can be trusted as fully for the cream content as for the other more important qualities. In the production of homogenized milk, pasteurization must be efficient, because the number of bacteria in milk is apparently increased by this homogenizing process. Clumps of bacteria are broken up by homogenization and distributed throughout the milk. Though the increase in bacteria is only apparent and not real, homogenized milk tends to sour more easily, unless it is properly pas-

teurized. For this and other reasons affecting the flavor of the milk the distributor must keep a close watch on the process of pasteurization.

Cells from inside the udder of the cow are present in all milk, more in some milks than in others. These are in no way harmful. Normally they rise to the top with the cream and are unnoticed by the consumer. When milk has been homogenized, no cream rises, and the cells settle to the bottom, often in a visible layer of sediment. Sediment layers never will be popular with the consumer, and for this reason careful handling of homogenized milk is necessary. Often it is put through a clarifying process. When considered from this point of view, homogenized milk is frequently cleaner than natural milk.

When natural milk freezes, partial separation of the fat results, and satisfactory remixing is often difficult. The fat of homogenized milk is more stable and after freezing will show at most only a slight separation into a thin cream layer.

It might seem logical to think that when the fat of milk is so much more finely divided by homogenization it would be more readily digestible. This, however, does not seem to be true.

Homogenization of milk or cream increases its viscosity; that is, it makes milk appear thicker and less fluid. It is no doubt for this reason that homogenizing machines are sometimes called viscolizers. This effect is more marked when the milk contains over 5 or 6 per cent fat. Cream containing 20 per cent fat often appears after homogenization to be as rich as cream containing twice this amount of fat. The appearance of increased richness is reflected also in the taste. For many people, but apparently not all, homogenized milk has a richer flavor and smoother texture. The richer flavor is no doubt due in part to its slightly thickened quality and in part to the presence of an increased number of fat globules, which now present a greater surface area as compared to that in natural milk. For some people the apparently increased richness permits the use of homogenized milk in place of light cream for coffee, cereal and similar table use. It is interesting, too, that homogenized milk imparts to coffee a color not unlike that produced by cream.

All observers are not agreed that homogenization improves the flavor of milk. Preferences in taste are individual and often cultivated. Relatively few people have been found to have an unfavorable attitude toward the flavor; while many have a definite preference for the taste of homogenized milk. Homogenization together with pasteurization tends to stabilize the flavor of milk and helps to prevent the development of unusual or undesirable flavors.

Though the most obvious effect of homogenization of milk is on the fat, important changes in the curdling properties also occur. When fresh milk sours or when it undergoes the first stages of digestion in the stomach, a curd is formed. The firmness or softness of the curd under these circumstances depends in a large measure on the amount of casein in the milk. Just as the milks of different cows and breeds of cows differ in fat content, so they also differ in the amount of casein they contain. Thus it happens that the milk of some cows forms a much softer curd in the stomach than the milk of other cows. The firmness of curd is spoken of in terms of curd tension and is measured by the amount of force necessary to pull a standard curd knife through the curd of milk that has been coagulated under standard conditions. If the amount of force required to pull the curd apart is less than 30 grams (approximately 1 ounce), the curd is considered soft. If the required force is greater than 30 grams the curd is considered hard. A soft curd is loose and mushy and can be passed through a fine sieve easily to make a product that is almost liquid. If the curd tension is more than 50 grams the curd is firm, tough and leathery; it resists efforts to pass it through a sieve. Some cows consistently give milk with a curd tension less than 30 grams and others give milk with a tension greater than 100 grams. Mixed milk, such as is obtained from the milk distributor, usually has an average curd tension between 50 and 70 grams.

The curd tension of milk is lowered by homogenization. The amount of lowering depends on the original tension and on the extent to which the fat globules have been broken up to smaller ones. Pressures of over 2,500 pounds to the square inch and temperatures above 115 F. are necessary to produce the maximum effect in reducing the size of the fat globules; consequently these are also necessary to produce the maximum effect in softening the curd. Each fat globule of milk is surrounded by a layer of casein. When the number of fat globules is increased by homogenization, the amount of casein held by the globules is increased; so the amount left free in the milk for curd formation is correspondingly decreased.

The production of soft curd milk by homogenization is easily possible if all the factors previously mentioned are properly controlled. Though all homogenized *(Continued on page 537)*

As there are tricks for smart traders, so there are schemes for wise wives. Let
HARRIET ACHESON KOCH
introduce you to some of her best ones

Stephen Deutch

BUSY with building a comfortable financial future for his family, often working long hours, worrying about the welfare of every one else, a man is likely to forget that he has a constitution of his own that needs some attention if it is to carry him safely through a long, strenuous life. Now his wife enters the picture.

A properly conducted health program begins early enough to prevent many of the difficulties that take their biggest toll of lives of middle-aged men. Such a program usually includes as preventive measures a yearly health examination, proper diet, weight control, sufficient rest, sleep and exercise and prompt attention to

How to Keep Your Husband Healthy

any small ailment, which may later grow into a serious one.

When the bride and bridegroom come home from the honeymoon and set up housekeeping, it is the crucial time for the bride to set in operation a plan that will help "raise a healthy husband." Being a tower of strength and the seven pillars of wisdom rolled into one will be a help and will just about take care of the business at hand, for it is no small job to keep a man on the straight and narrow, as far as his health habits are concerned.

Taken as a whole, it may sound like an overwhelming task to a young lady who has just acquired a husband. Just where does she begin? There is one sure beginning—and that is diet. What a man eats determines to a great extent what kind of a man he is and will become. Science comes nearer proving this every day.

Grandma, dear old-fashioned soul, had this well figured out before calories were even invented. No day for her was rightly begun unless it started with a leisurely breakfast and proceded straight through to a hearty supper. And breakfast to her didn't mean a gulp of scalding coffee and a piece of toast, either. It did mean crawling out of bed a good half hour earlier for the whole family. But with the fragrance of coffee being brewed and the good smell of bacon and eggs floating up to greet one, it was never much of a task to get even the sleepiest ones up.

Well begun is half done, she used to say, and this applied to the day as well as everything else. For a number of years just past, it was the fashion for every one from plump matrons to grade school pupils to omit breakfast entirely or perhaps boast wanly of "caring only for a glass of orange juice or a cup of coffee." Fortunately those foolish days are on the wane, and while we may not go as far as Grandma did in insisting on sturdy breakfasts, we are again recognizing the need for starting the day right with an unhurried, well balanced meal. Such a beginning to the day gives the body a chance to establish normal and regular functions of digestion. And what it does toward giving one calm, steady nerves, only those who have tried it can tell. An incident, which on an empty stomach appears to be a major catastrophe, appears "just one of those things" after a hearty breakfast.

Unless there is a willing Matilda in the kitchen ready to cook breakfast for us, most of us are looking for the kind of meals that can be prepared in a rather short time. Just the time it takes, as a matter of fact, for the gentleman of the family to have his shower, to shave and dress. That is rule number 1 for the bride. Breakfast should be ready so that it won't be necessary for hurried husbands to wait so much as a split second for them! Any spare minutes can be used to much more advantage in making it a more leisurely meal, rather than just waiting.

It takes all kinds of days to make up a summer—most of them hot. There is no time, therefore, when it is more necessary to make breakfast tempting and dainty. Hot cereals, hot breads, pancakes and waffles are best relegated to the winter months when early morning appetites are sturdier and fuel needs greater.

Ready-to-eat cereals, fruits and eggs are the mainstays of summer breakfasts. With the meal served in the garden or on a cool, screened porch, there are few—not even self proclaimed non-eaters-of-breakfast—who wouldn't be tempted by the following menus:

Chilled Orange Juice
Strawberries and Cream
Thinly Sliced, Toasted Cinnamon Rolls
Coffee or Milk

Half Grapefruit
Scrambled Eggs with Chopped Chives
Melba Toast Crisp Bacon
Coffee or Iced Chocolate

Iced Prune Juice with Lemon
Ready-to-eat Cereal with Sliced Peaches
Pecan Rolls Coffee or Milk

Iced Apricot Nectar
French Toast with Red Raspberries
Coffee or Milk

Fresh Rhubarb Sauce
Grilled Sausages and Pineapple
Breakfast Rolls Coffee or Milk

Fresh Cherries, Pitted
Soft Boiled Eggs Toast
Coffee or Milk

These are a few examples of adequate and delicious summer breakfasts that may be prepared in a twinkling. The emphasis is on fruit, and with good reason, for summer gardens are so generous, and fruit is away in the lead as the easiest to eat food with which to begin the day.

From a good breakfast we proceed naturally in meal planning to luncheon. There are few men who are able to return home for luncheon in these days of short lunch hours and commuting. But this does not mean that her husband's lunch is no responsibility of the bride's. This one meal, if poorly chosen, can upset the whole apple cart. Heavy meals, hurried luncheon gobbled at a counter or improperly prepared food eaten anywhere are all stepping stones to later troubles.

A clever young lady can be a great help in preventing her new husband from making these mistakes. She can urge him to select a desirable place to eat, to spend the money necessary to buy good food and to take sufficient time for a leisurely meal. It is poor economy to try to save by eating in "joints." By suggesting that in order to keep his handsome figure, his health and vitality he eat certain types of meals, a woman usually finds her husband pleasantly cooperative. It's up to the bride to find out what type of luncheon will be best for her husband, and the family doctor will help her if there is any unusual problem of weight or diet restrictions. Unless they are doing heavy physical labor, most men of normal weight seem to thrive best, to do better work and to maintain their proper weight on light lunches; this is especially true in the summer, and they can be guided toward making such selections.

Soups, sandwiches, salads, vegetable or fruit plates and light desserts with a glass of milk are the standbys for the summer menu. Every day more and more business men show a greater tendency toward the selection of this type of meal, and their trim, energetic figures are evidences of it.

Most men are naturally fond of milk and drink surprising amounts of it, once they start including it in the diet. Sometimes getting them started is the problem. A man will appreciate the tip and will think his wife clever, if she can give him the scientific reasons why he should drink his "pint a day."

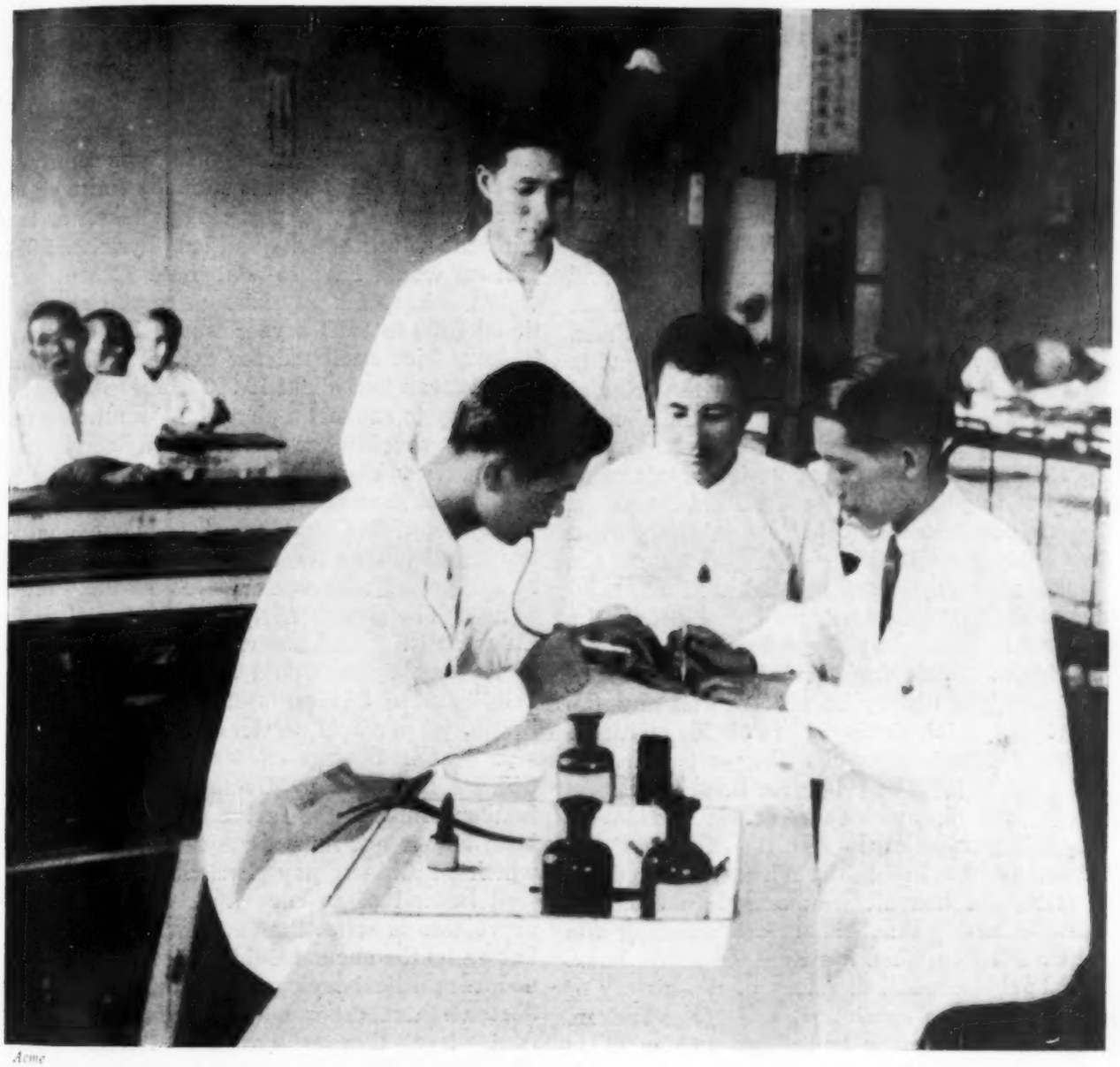
Modern research has shown that milk never ceases to be a valuable food, and adults need its body building qualities almost as much as children do. Its value in the preservation of good eyesight has recently been demonstrated, for milk is rich in vitamin A, the lack of which produces night blindness. The calcium of milk is known as a good muscle builder and helps keep them smooth, elastic and in good working order. When it is considered that the heart is largely composed of muscle, the immense importance of this fact should be appreciated. The calcium and the phosphorus of milk combine to keep the teeth in good repair, thereby saving much on dentist's bills. These are just a few of the reasons why milk is valuable in the diet in addition to the fact that it is a delicious and satisfying food.

Dinners automatically become the next step in building a healthy husband. This still remains the problem of the bride, even though she may have a fleet of servants to do the actual work. It is the bride's responsibility first of all to plan menus that include the proper foods, then either to prepare them herself so that they are what the home economists call "standard products" or see that the cook does.

It isn't necessary to know a great deal about minerals, vitamins, carbohydrates, fats and proteins if a girl just remembers that variety is the spice of life. If her dinners have food varied in textures, flavors and colors, the chances are that they are well balanced. With magazines, newspapers and public service departments of large corporations devoting so much space and time to authoritative information on planning meals, there is little to do nowadays but follow the most choice of plans offered.

The fact is, there may be more difficulty now, because alert brides prepare such delicious meals that young husbands are tempted to overeat, which in time is sure to add unwanted pounds. Since it is easier not to gain than it is to lose, and because overweight helps cause many of the difficulties of middle age, the bride is wise if she watches the number of calories that lurk in her tempting dishes. A frequent check of weight will tell her whether to step up or step down the number of calories per meal.

Fortunately it isn't necessary to make meals any less appetizing or delicious, even if it is necessary to scale down the calories. Neither is it necessary for a man to know that calories are being watched for him. This is particularly true in summer when hot weather appetites relish most the foods which are low in calories —lean meats, vegetables, fruits, cool drinks and light desserts. No need to warn against too much fried food, fat meats or over-rich desserts when the thermometer climbs steadily upward. Hot weather is no time for a woman to spend too much time over a *(Continued on page 573)*



Acme

There is only one modern trained physician in China for every 30,000 of their inhabitants.

The CHINESE MEDICAL MYTH

By J. D. LAUX

"THE Chinese pay their doctors to keep them well, instead of to cure their illnesses." You have heard this before! But don't believe it!

No one knows where this myth about the Chinese had its origin. One avowed basis is a reported interview with a Chinese—unknown and unnamed—who is quoted as saying:

> The more I study Americans, the more I am convinced that they are mentally diseased. Instead of doing everything in a common sense manner, they try all they can to do it in the very opposite way. At home, for example, you and the other members of your Mutual Health Association would pay Dr. Wun Lung and his assistants each a liberal salary to keep

you all well, and pay nothing when you are sick. On this account he and his young men work very assiduously in calling regularly and examining every member of the union, and all of you enjoy comparative immunity from illness. Here in America a physician is paid by the amount of your sickness, and the less you are able to earn any money, the larger and more onerous is his bill. As a result, some doctors, I am told, yield to temptation and keep their customers sick. The consequence is that those who have the largest number of sick and dying are the richest, most esteemed and influential, while in China they would be ostracised and not allowed to practice.

This very "un-Chinese" language has been dignified by impressive footnotes in erudite books which, when traced back for the original source, are lost in a privately circulated periodical in Texas no longer published. Apart from this questionable quotation, statements have been made ever since 1886 that the astute Chinese pay their medical attendants only when they enjoy good health.

Like so many other quoted and requoted statements that gain credence by repetition, the original is apparently the mere idea of some individual. Such, for example, are the statements on the history of the bathtub and the difficulties which the inventors of this civilizing device encountered when they attempted to make use of it. The origin for these unhistoric events was a newspaper article by H. L. Mencken purporting to give the "facts" of the history of the bathtub. When the incidents described in this story appeared in scientific journals and gained historical standing the author felt compelled to reveal the entire hoax. Despite this exposé, the story of the history of the bathtub has continued, and Mr. Mencken, out of his desire for truth, has written other articles exposing the plain spoofing of the original article. The latest exposé appeared in October 1937—twenty years after publication of the original article—but it is not believed that the fanciful story of the history of the bathtub will die. All of which goes to show that man should be most cautious in what he states to be the truth, even if he has his tongue in his cheek.

True, many of the requoters of the Chinese myth doubt that any such system of medical practice exists. As long ago as 1911 a Chinese consul, in answer to a query about the Chinese custom of paying their physicians when they are well and stopping payment when they are sick, replied, "This misstatement is often seen in the literature, but must be classified with the fabrication that the Chinese eat rats, or that they did not wear long hair till compelled to do so by the Manchu conquerors." As a matter of fact, such a system of payment is impossible in China. In an article by Dr. Wu Lien-Teh in *The Chinese Medical Journal* (June 1937) it is made clear that a system of annual payment for a qualified physician would be impossible. As he points out, the average Chinese family is able to spend only 30 cents annually for medical care. Hence, if $600 per year is taken as the minimum income for a qualified physician, 5,000 persons would have to contribute 12 cents *per capita* to keep the physician alive and an additional $400 to $500 a year would be necessary to keep him equipped for active work. This would mean that about 10,000 Chinese would be necessary to support a physician—a number for which no practitioner could properly care.

It has been shown frequently that the quality of medical care is more basic than the system of payment. In China there is only one modern trained physician for every 30,000 inhabitants, as compared with one for 768 in the United States. The dearth of qualified physicians in China and the well known impoverished status of its people also would seem to question the validity of a Chinese system of payment for preventive medical services.

A search through a 906 page history of Chinese medicine by Doctors Wong and Wu further confirms the fact that there has never been and is not now any system by means of which the Chinese pay physicians to keep them well instead of to cure their illnesses. That prevention is better than cure was undoubtedly known by the ancient Chinese doctors. One old Chinese medical saying puts it thus, "the skillful doctor treats those who are well, but the inferior doctor treats those who are ill." Recognition of the desirability of prevention by the ancient Chinese priest doctors does not permit the conclusion that there is a system of payment for medical care in China which provides payments only for prevention of illness. In China, as in every other country, rich persons often request physicians to devote their entire practice to keeping them well. Nevertheless, even under such an arrangement the physician receives an income that remunerates him for his services both in attempting to keep his patient well and in treating the patient when sick.

Why has this myth of a Chinese system of medical payments persisted? Perhaps because it is a catchy, fanciful idea surrounded by all the hoary lore of Chinese wisdom that can be used by protagonists of medical care systems in somewhat the same manner that other statements are used to mislead the gullible and to paint a rosy picture of wishful thinking.

THE MODERN AVIATOR

When you entrust your life to the care of some one else, you want to know that he is competent to return it undamaged. Part of the unquestionable efficiency of the crew of today's big airliners is due to their superb physical fitness. And this is not by chance, says ***SIBYL WINSER JOHNSTON***

THERE are times when the reactions of an airline pilot to an unforeseen situation while flying may mean the margin between safety and danger. For this reason everything humanly possible is done to maintain this man's physical perfection of health, on which his alertness and judgment so intimately depend. The stewardess, who of course is a registered nurse, also receives close attention to her personal well-being, for on her shoulders rests the burden of the passengers' health, comfort and happiness during a flight. And passenger comfort ranks second only to safety in the airlines' estimation.

To maintain a physically alert condition, each pilot must undergo an exacting physical examination, complete in every detail, every ninety days. If any physical imperfection shows up, even if only slightly out of the ordinary, steps are immediately taken to correct whatever it may be; and in many instances as a precautionary measure the pilot is "grounded" until he is back again to normal. Airline men put their faith in the efficacy of preventive medicine and the correction of deviations from the nor-

mal while they are still of negligible caliber. The sooner defects are detected the better for the ease and speed with which they can be cleared up.

Aviation medicine was an outgrowth of the World War, and to Great Britain belongs the credit for demonstrating the great advantage of a special medical examination for flying. An analysis of her air casualties for the first year of the war showed that 2 per cent met death at the hands of the enemy, 8 per cent from defective planes, and the remaining 90 per cent were due to defects of the pilots themselves. As a result of this startling discovery the British established a special "Care of the Flier Service," and afterwards her aviators were selected with due regard to their physical and mental qualifications. As a result, at the end of the second year their fatalities traceable to physical and mental defects were reduced from 90 to 20 per cent, and at the end of the third year a still further reduction had been made from 20 to 12 per cent. Those who specialize in aviation medicine are known as "flight surgeons." It's an odd specialty, in that primarily it deals only with the selection and maintenance of physically fit persons. For that reason those who undergo physical examinations for flying are never referred to as "patients"; instead, they are called "examinees."

This comparatively new specialty in medicine, which also embraces an intensive study of the physical and physiologic variables encountered aloft, is an outstanding exponent of preventive medicine and in its work proves daily the value of the periodic physical check-up, which the medical profession at large has been so repeatedly advocating.

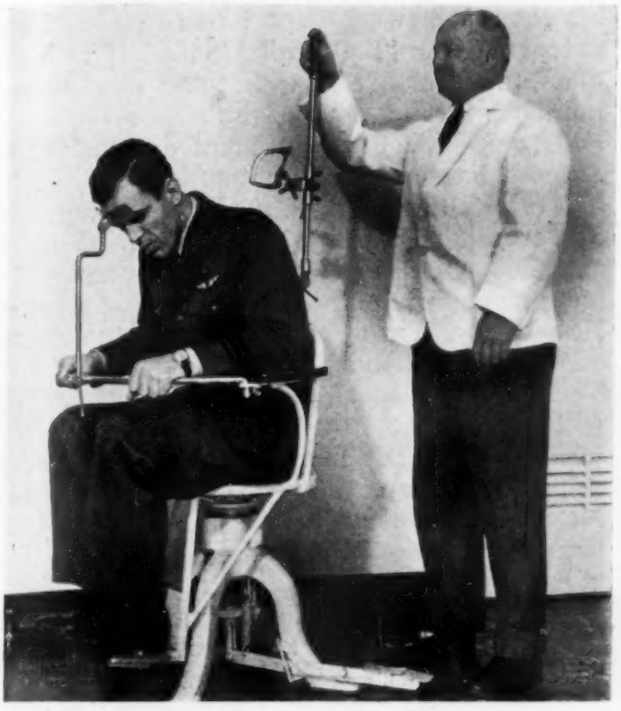
Pilots join an airline company physically fit in every respect. The entrance physical examination must clearly establish that fact; otherwise they are not taken on. That policy exemplifies selection in the interests of safety. Thereafter, from the maintenance standpoint, the medical director must keep the pilot fit, and the only way he can do it is to enlist the pilot's cooperation and conduct examinations at such intervals as will detect any deviation from the normal. The object, of course, is to detect such deviations in their incipiency so as to be able to nip them in the bud before they can become a disability, which might impair a flier's future usefulness or even abruptly cut short his flying career.

Twice annually the pilots must appear before physicians of the Civil Aeronautics Authority for a thorough physical checking to determine their physical fitness for flying. These experts, who apply the federal yardstick, are designated as "Medical Examiners CAA." Also, twice annually, at intervals that halve the federal appointments, pilots go before their respective airline examiners for an equally comprehensive overhauling. Thus, every three months they are checked for physical defects. Moreover, during those intervals they report immediately whenever their physical condition becomes in any way impaired. And if they have been absent from work because of an illness or injury, if only to the extent of missing one scheduled flight, they must come under the searching eye of the company examiner and obtain a physical fitness clearance before they are again permitted to fly a plane.

A typical test for a pilot or stewardess takes two hours to complete. The data on their examination, when completed, fills out a thirteen page worksheet, on which there are ninety-four general and specific points to be checked, plus subheadings. The examinees themselves indicate, for instance, the amount and kind of exercise they take each week, typical meals they eat (for lack of vitamin A may produce night blindness) and illnesses suffered and accidents or injuries sustained since last examined.

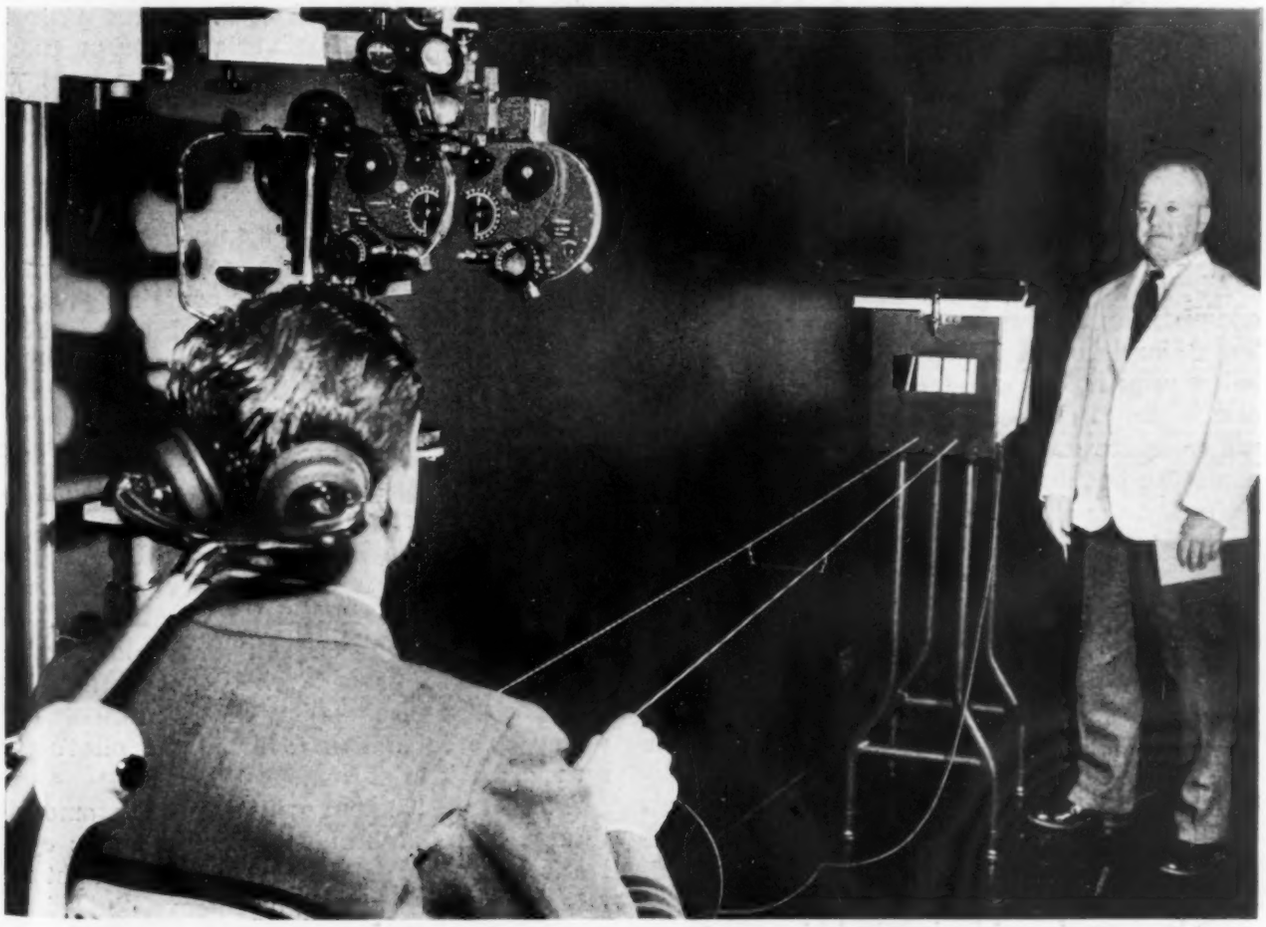
The first test taken is usually the Schneider Index, a circulatory efficiency test peculiar to aviation medicine. This is inaugurated by asking the examinee whether he has anything on his mind—any worries involving marital relations, financial difficulties or health—that might

What the pilot can hear aloft determines the whole course of his flight. So he is regularly tested by the audiometer for defects in hearing.



Pilot John F. Martin undergoes the "vestibular equilibrium" test, in which he is whirled around ten times, first in one direction, then the other.

Here the amount of night blindness, if any, in Pilot Martin's sight will be detected. He is staring at a special light which removes the "visual purple" from his eyes.



Another important step is the determination of correct depth perception. Those two black rods in the illuminated box must be alined within a fraction of an inch from a distance of twenty feet in five trials. The Chicago medical examiner for United Air Lines is marking Pilot Martin's score.

make an inroad on his physical fitness. This is a leading question and extremely important, for it goes without saying that a pilot must harmonize any such difficulties before he can be permitted to fly, because one who is harassed by worries has no place at the controls of a plane.

The Schneider Index will invariably indicate any borderline unfitness which may be present, and a low score will put the examiner on guard to detect the underlying reason for any departure from the normal. Failure to make a good score does not disqualify the pilot or stewardess for service; it merely gives an index of the general condition—as reflected in the behavior of the cardiovascular system (heart and blood vessels) under rest and exertion. The pilot to be examined lies down and rests for five minutes, after which a pulse count and blood pressure reading is taken; then he rises, and the pulse and blood pressure is taken standing. Next he exercises by stepping up and down on a bench 18½ inches high five times in 15 seconds, at the end of which the pulse is counted, and the time elapsed for a return of pulse rate to the standing rate is also recorded in terms of seconds. His score is computed by a point system, ranging from a maximum of plus 18 to a minimum of minus 4 or more for the six steps, which comprise the test. Athletes will average a score of about 14, the average man in good health about 12, women about 2 points less than men and psychoneurotics or the emotionally unstable 8 or less. Most pilots score between 12 and 16, some of them 18.

As part of the thorough and searching general examination, his sense of equilibrium is checked by a simple self-balancing test, the examinee being required to stand on one leg with eyes closed for 15 seconds, and the findings, if unfavorable, are confirmed by placing the examinee in the "Jones-Barany Chair." In this chair test the fallibility of the human sense of equilibrium as against the absolute accuracy and dependability of the aeronautic instruments is vividly demonstrated. It is used routinely to convince young pilots, early in their training, that they cannot rely on their sensations when flying in overcast weather without any outside visual references and that they must trust their instruments implicitly. One such demonstration is sufficient. It's a simple as well as amusing procedure and is usually conducted in the presence of other pilots. With his eyes closed, the examinee is turned to the right; then the chair is stopped, and he is asked his sensations. He will invariably say, "I am turning to the left." He is next whirled to the right and as his chair is slowing down he will state, "I am not moving," or "I'm turning to the left"; whereupon the bystanders, with some glee, assure him he is turning to the right.

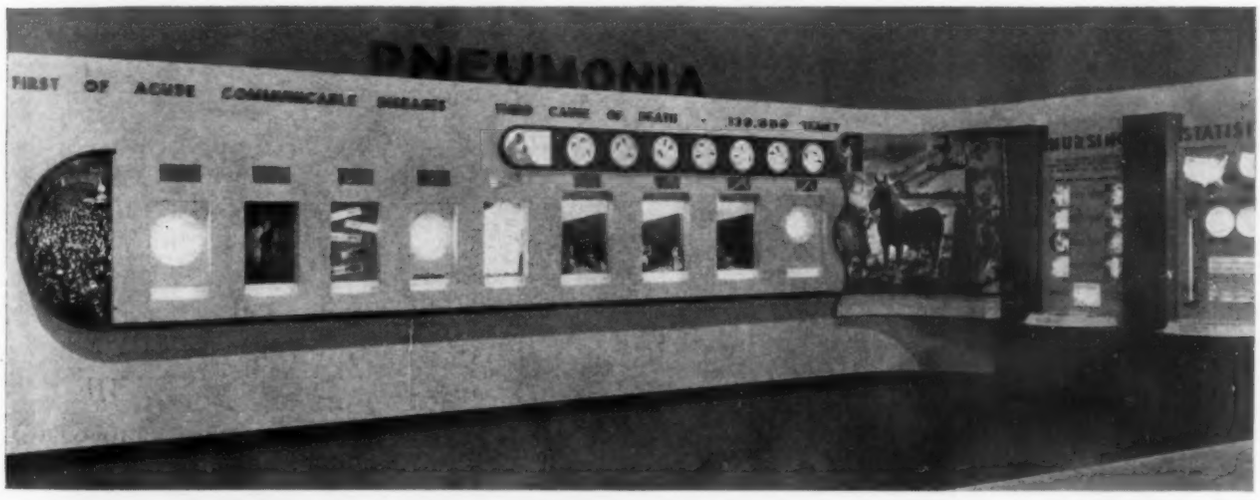
Then follows the instrument demonstration. A small box containing a compass or a bank-and-turn indicator is attached to the chair, and the examinee buries his eyes in it so as to exclude any outside references. He watches the instruments while the chair is being rotated. He will say, "I'm turning right, and the instruments also tell me I'm turning to the right." Then when the speed of rotation is reduced, he will state, "The instruments show me I am turning right, but my senses tell me I have stopped," or he may even say, "If it were not for the instruments, which indicate the contrary, I would say I am turning left, because that is the way I feel."

For the regular "vestibular equilibrium" test, the pilot sits in the rotating chair and bends his head forward 40 degrees, closing his eyes. He is then whirled around in each direction, first to the right and then to the left. Ten turns in exactly 20 seconds one way will result in horizontal nystagmus, or rapid oscillation of the eyeballs from side to side; this normally lasts for 26 seconds, and a variation from 10 to 34 seconds is allowable. If this reaction lasts for a longer period, it is abnormal and means failure to pass this important test.

The eye examinations come next. For this there are twenty-three distinct steps, including many supplementary checks and double-checks. Among the numerous instruments necessary for these are an ingenious device containing among other features a phorometer hook-up of Risley prisms and Maddox rods and a rotoscope, which check the condition of the six pairs of tiny muscles controlling the movements of the eyeballs. When it is shown that any of the eye muscles lack tone and need exercise, the rotoscope can be set to give the proper amount of stimulation. The fixing object is rotated in one direction for 30 seconds, then reverses itself and goes for 30 seconds the other direction. As the eyes follow it throughout each rotary excursion they too have to roll, thus getting the necessary exercise. Thirty such treatments, one a day, are calculated to bring the pilot's eye muscles back to normal.

Another instrument will detect the amount, if any, of night blindness in the pilot's eyes. He is instructed to stare at a special light for three minutes to bleach, or remove, the "visual purple" from his eyes. (This exhaustion of visual purple is exactly what happens to automobile drivers at *(Continued on page 552)*

What do you know about PNEUMONIA?



***Medical programs for the control of pneumonia include education of the public on its symptoms, dangers and prevalence. When you journey to New York's "World of Tomorrow," pause before this instructive exhibit. Here is what it's all about*—By RUSSELL L. CECIL**

EFFORTS to control pneumonia, the most deadly of acute communicable diseases, are becoming more systematically coordinated, thanks to the advancing medical knowledge of its cure. No small part of the effort to check pneumonia has been the diffusion of information about it through public channels, and the New York World's Fair pneumonia exhibit exemplifies this tendency to inform the public.

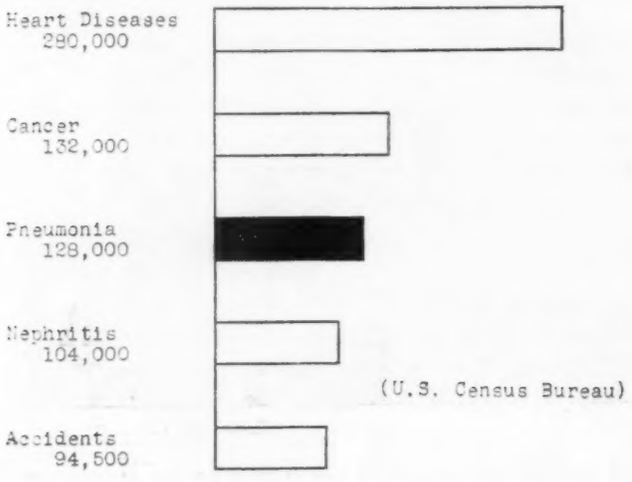
Several points brought out in the exhibit blast some popular misconceptions about pneumonia, among which is the rather strange feature of its distribution. While the maps show that states with the highest death rates are irregularly scattered over the country, the South and Southwest—where one goes supposedly to escape the rigors of cold weather, including colds and pneumonia—at least share the mortality with the North. According to the figures of the U. S. Census Bureau compiled for the years 1935 through 1937, Arizona has the highest death rate with 156 persons per hundred thousand population. New Mexico is third with 123. Louisiana has 99 and Georgia, 95. New Jersey has the lowest rate—64 per hundred thousand—and is followed by Connecticut, South Dakota, Nebraska, North Dakota and Florida with 65, 65, 66, 68 and 68, respectively, all northern states but one. This merely shows the fallacy in popular ideas about the prevalence of pneumonia.

There are a number of factors that enter into this picture. For one thing, Negroes who make up much of the southern population are particularly susceptible to pneumonia. In the Southwest the high dust content in the air may have something to do with it, in addition to the large number of invalids who migrate to this section of the country. Then, too, the numerous prevailing methods of signing death certificates may allow a fraction of errors to creep into the whole compilation.

But there is another interesting factor that may certainly in the cases of some states make considerable difference. This is a pneumonia control program. There seems to be a definite correlation between most of the low mortality states and those that have a definite program for furnishing serums or for educating the public. Some of these states are supplying pneumonia serum free or at cost. Others supply diagnostic serums only. In a third group, educational programs, preparatory to the provision for diagnostic and therapeutic serums, are under way. A model program would provide (1) approved typing stations and serum supply depots; (2) free diagnostic serums for

typing pneumonia specimens; (3) free therapeutic serums for treating those in need; (4) graduate medical education through meetings, literature, exhibits and motion pictures; (5) education of the people through official publications, the radio, the press, motion pictures and public meetings; (6) education of public health nurses in home care and family instruction; (7) supervision in the health department by a physician specially trained in handling pneumonia cases, and (8) guidance by an advisory committee representing all interested organizations.

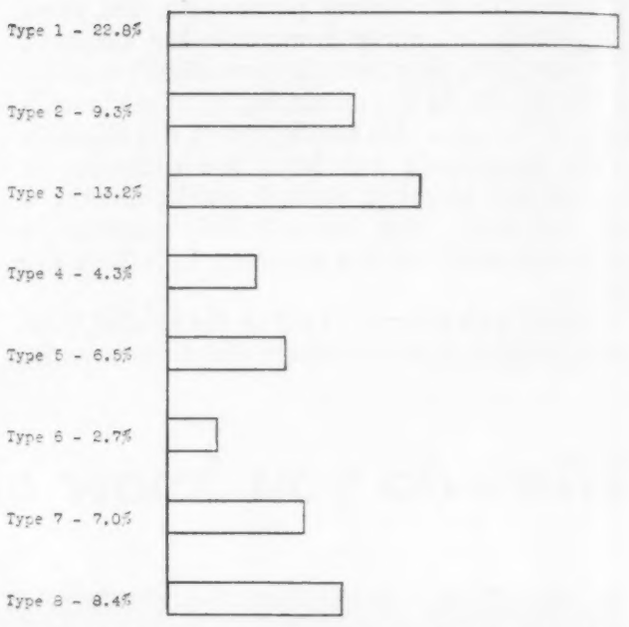
Pneumonia, third ranking cause of death in the United States, is for the most part caused by a germ called the pneumococcus. There are more than thirty species of this germ, all of which closely resemble each other in appearance under the microscope; but each of these produces its own specific type of pneumonia.



Pneumonia strikes one out of every 179 persons.

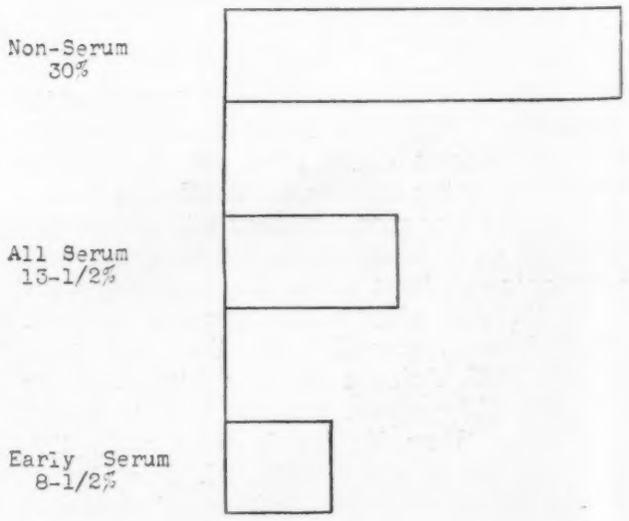
Because of this fact it is necessary to have a different serum for each type of the disease. Type I is the most common, constituting nearly 23 per cent of all the cases of pneumonia caused by the pneumococcus. Types I to VIII inclusive account for 75 per cent of all the cases of lobar pneumonias. Therapeutic serums for curing these eight types as well as the less common kinds are available to physicians.

Serums are made from the blood of horses or rabbits that have been immunized against one of the pneumococcus types. The animal receives a number of injections of the dead germs, and when the blood registers a high degree of immunity, the animal is bled and the serum separated from the coagulated blood. The serum is then purified and concentrated by certain chemical procedures and is ready for use.

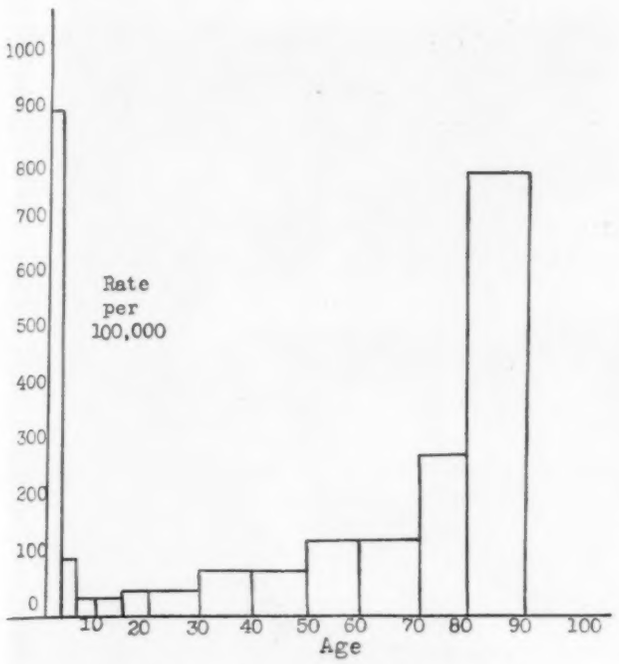


Seventy-five per cent of the cases are caused by types I to VIII.

The high degree of cures brought about by the use of these serums can be most effectively shown by citing a few statistics. For instance, for type I the standard death rate for pneumonia where treatment did not include the use of serum is 30 per cent. But in a large series of patients who received serum, the death rate was only 13.5 per cent, less than half the standard rate. When serum treatment was administered early in the disease, that is, during the first four days after onset, the death rate was only 8.5 per cent, a reduction of more than two-thirds in comparison to that for patients who received no serum. Serum is just as effective



"Non-Serum"—None of these patients received serum.
"All Serum"—These received serum at some stage in the disease.
"Early Serum"—Administration of serum began within 4 days of onset.



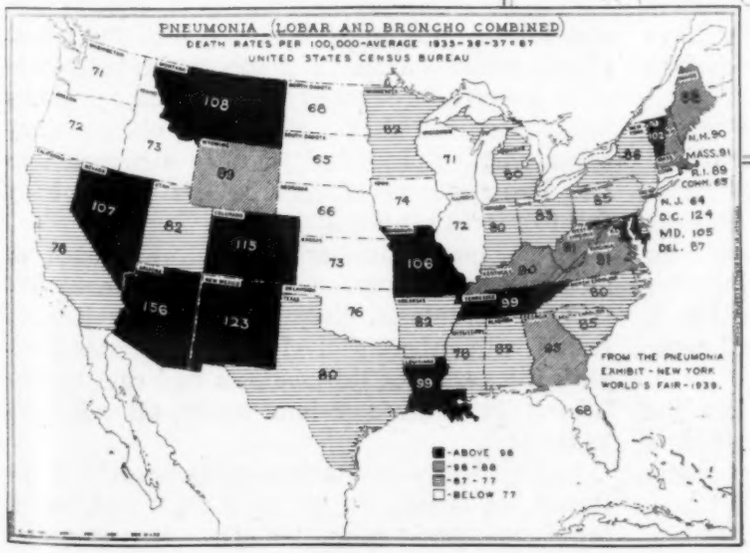
Pneumonia deaths rank highest in infancy and old age.

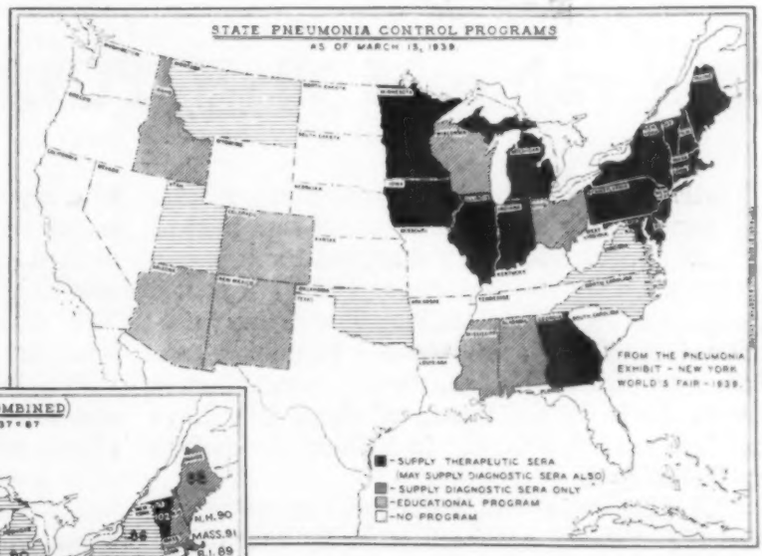
in certain other types of pneumonia as it is in type I cases. This is particularly true of types V, VII, VIII and XIV, in which serum therapy has had extensive trial. For some reason not entirely clear, serum therapy is less effective in type II and III pneumonias than in others. However, when large doses are used in these cases, serum seems to have a definite value.

According to a recent estimate of the potential life-saving power of serum treatment in lobar pneumonia, or pneumonia involving the lungs, the lives of 28,630 men, women and children could be saved out of the 63,000 deaths that annually occur without benefit of serum. And an additional 9,500 persons would be alive after their attacks of bronchial pneumonia if the available serums for treating this were utilized. Thus an annual total of nearly 40,000 persons could live who otherwise die from these diseases.

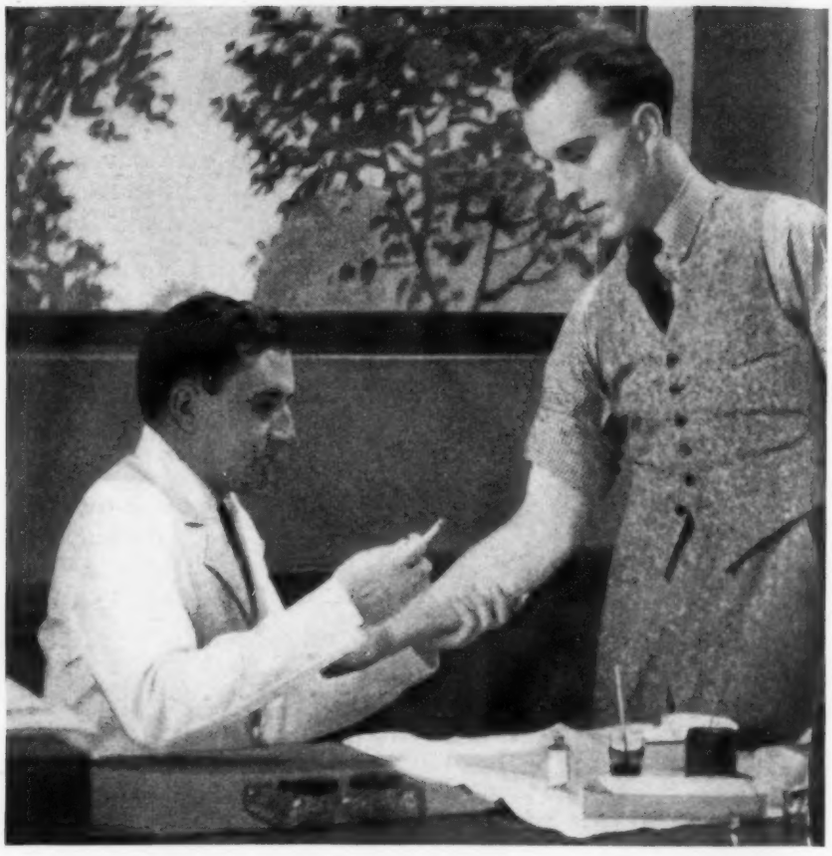
Recent experiments with a drug called "sulfapyridine," a derivative from sulfanilamide, have indicated that it may have specific usefulness in the treatment of pneumonia. This in combination with the ever-increasing benefits from the state control programs now in effect will undoubtedly cause the mortality rate of pneumonia to drop more and more rapidly, until some day in the future it becomes one of mankind's rarest diseases.

Below, the figures on the map show the mortality rate for each state. The highest figure is in Arizona with the ratio of 156 persons dying from pneumonia out of each 100,000 of population.




STATE PNEUMONIA CONTROL PROGRAMS
AS OF MARCH 15, 1939
FROM THE PNEUMONIA EXHIBIT - NEW YORK WORLD'S FAIR - 1939.
SUPPLY THERAPEUTIC SERA (MAY SUPPLY DIAGNOSTIC SERA ALSO)
SUPPLY DIAGNOSTIC SERA ONLY
EDUCATIONAL PROGRAM
NO PROGRAM

Note the relation between low mortality rates and complexity of the state pneumonia control programs. With the exception of Vermont and Maryland, all those shown in black above are in light tones at left.



By J. ARTHUR MYERS

The value of THE TUBERCULIN TEST

THE statements which occasionally appear condemning the tuberculin test as a part of the program for controlling tuberculosis are often made by persons engaged in antihealth work, such as antivivisectionists and antivaccinationists. Occasionally even a physician condemns the tuberculin test. Such statements may create doubt in the minds of those who have not had an opportunity to inform themselves on the subject.

The tuberculin test, both for human beings and for animals, has been used for more than forty-five years. It does not contain any germs of tuberculosis, either dead or alive. There is not the slightest possibility that any one can get tuberculosis from the test. The dosage for testing has been so carefully standardized that, when properly administered, harm cannot come to the person tested.

The careful physician who administers the tuberculin test always chooses a first-class preparation, of which the potency has recently been determined. He administers it between the layers of the skin and never under the skin. If a reaction does not occur within forty-eight hours he administers a second larger dose in order to determine with certainty whether there are living germs of tuberculosis in the body. The well informed physician knows how to interpret the reactions so as to divide those tested into one group free from tuberculosis and another group in whose bodies the germs of tuberculosis exist. The tuberculin test, properly administered and interpreted, provides information which is impossible to obtain in any other way. Rarely indeed does a person who has living germs of tuberculosis in his body fail to react to the test.

When large numbers of animals, such as guinea pigs, are reared in an environment free from tuberculosis, they will not react when tested with tuberculin. If one inoculates them with the germs of tuberculosis and retests with tuberculin in three or four weeks, all will react to the test.

In 1891 the veterinarians of the world began to use the tuberculin test as a means of detecting tuberculosis among cattle. Because they

could slaughter and examine the bodies of the reactors, they quickly proved beyond doubt that the test is so delicate that it will reveal the presence of disease in the animal's body before it has attained an otherwise noticeable degree. Moreover, they were convinced that it revealed the presence of microscopic areas of disease. They immediately recognized this as a means by which they could find all infected cattle and thus eradicate the disease. Since 1891 the 58 million cattle of the United States have been tested with tuberculin. The test has been so effective in finding those with tuberculosis, both large and small in amount, that by the close of 1939 all of the 3,072 counties of the nation will probably be accredited with reference to tuberculosis among cattle. This shows how extremely specific the test is for detecting the disease in the cattle herds. Indeed, it has almost solved a great economic problem. In 1917 in the slaughter houses under federal inspection, 40,746 cattle were condemned because of tuberculosis, while in 1938 this number had been reduced to 2,385. Moreover, there has been a sharp reduction of tuberculosis among human beings, partially because so few contract the disease from cattle as compared with the number in 1917.

When a contagious case of tuberculosis exists in a family, nearly all the other members, both children and adults, are found to react to tuberculin. In another family in the same block or neighborhood in which there is not a contagious case of tuberculosis, nearly all will fail to react to the test. Groups of students who do not react to the tuberculin test become reactors in large numbers when exposed to tuberculous patients, unless strict contagious disease technic is used to protect them.

In Cleveland, the school children of the first grade were tested with tuberculin. Those in charge of this work knew that every child who reacted had been exposed to a contagious case of tuberculosis. When they examined the close adult associates of these little children, they found 163 definite cases of tuberculosis among these adults, which had never before been reported. This was the figure for 1937. In 1938, however, they were even more successful; they found 224 such adults with unreported but definite tuberculosis of the lungs. This shows the specific value of the tuberculin test is in finding little children who have been exposed to adults with contagious tuberculosis.

Recent actual observations have revealed the fact that the human body may completely destroy the tuberculous infection; that is, all the germs of tuberculosis die. In such cases the tuberculin reaction will disappear. The old statement, "Once a reactor, always a reactor," does not appear to hold true. A great many physicians still hold it useless to repeat the tuberculin test for a person who has ever reacted; some physicians now recommend that tuberculin reactors be retested once in three to five years. If the test indicates that the infection has completely died out, annual x-ray examinations are not needed as long as the individual does not react to subsequent tests. There is the possibility that the person who has completely destroyed his tuberculous infection may at some subsequent time become reinfected through exposure to a contagious case of tuberculosis and again be a reactor to tuberculin.

When the tuberculin test is properly administered and the individual does not react, there are, with exceedingly rare exceptions, no living tubercle bacilli in the body. If there is a definite reaction we are at once in the possession of two valuable facts: First, there has been an exposure to a contagious case of tuberculosis; this clue often leads to that source. Second, the first infection type of tuberculosis, often spoken of as the primary tuberculosis complex, is present in the body of the reactor. The areas of disease constituting this primary complex range from those of considerable size to those which are microscopic. They may be anywhere in the body. The defense mechanism of the human body is so effective that these areas of disease are quickly walled off; but within the walls the germs of tuberculosis may remain alive over a long period of time. In the majority of persons there is no further development; but in a minority group there appears at some subsequent time areas of disease which cause illness or even death. These areas of disease may be in the lungs, the brain, kidneys, bones, joints or any other part of the body.

Because of the minority group of tuberculin reactors who subsequently fall ill from tuberculosis and because there is no way to determine which reactor will fall ill, the only safe procedure is to make a most careful examination of all adults who react to the tuberculin test. The first step in this procedure consists of the x-ray examination of the chest. Here we immediately encounter discrepancies, because there are so many structures and diseases other than tuberculosis which cast shadows on the x-ray film. For example, large blood vessels directed toward or away from the x-ray will contain such columns of blood as to cast shadows on the x-ray film that even the most expert interpreter cannot always differentiate on a single film the shadows cast by areas of

disease. Even when a shadow is due to disease, there is nothing inherent in it that will determine which disease cast it.

Sharply outlined shadows on x-ray films may be thought to represent calcium deposits and thus considered to be due to the first infection type of tuberculosis. At postmortem examination of persons who during life had x-ray film examinations and who died of nontuberculous causes, it has been found that these shadows often are due to other conditions, such as silicotic nodules, abscesses or foreign bodies, as small pieces of bone, wood or lead, which had been inhaled and around which nature had deposited lime. Indeed, in one series of 200 postmortem examinations there were 42 bodies in which the shadows previously cast by the x-rays were actually due to the first infection type of tuberculosis; but in 48 they were due to nontuberculous conditions. Therefore, it is impossible to determine from the shadow on the x-ray film alone whether one is dealing with the first infection type of tuberculosis or some other condition.

The x-ray examination is a gross method; that is, it does not detect evidence of disease that is microscopic in size. Many of the areas of disease of the first infection type of tuberculosis never become sufficiently large to cast shadows that aid us in identifying the disease. Although the tuberculin test indicates their presence, the x-ray fails to locate them.

The x-ray examination is usually limited to the lungs, and it happens that in this country approximately 12 per cent of the areas of disease of the first infection type of tuberculosis are not located in the chest; they are in the abdomen, the throat and other parts of the body and therefore are entirely missed by x-ray examination. Pathologists have shown that the x-ray film examination of the chest reveals evidence of the location of 20 to 25 per cent of the areas of disease which can be found at postmortem examination. Therefore, among tuberculin reactors one cannot hope to find in the x-ray film the location of the disease in every case.

Tuberculosis in the chronic and contagious form in the lungs is rare among children, even though they react to the tuberculin test. For some reason, which we do not yet understand, it begins to make its appearance about the time of adolescence and gradually increases in prevalence through the decades of life. It practically never develops except in the lungs of persons who react to tuberculin. When the period of adolescence approaches and annually thereafter, the x-ray film examination should be made of every person who reacts positively to the tuberculin test. The reason for this procedure is that the chronic contagious form of tuberculosis will cast a shadow on the x-ray film on an average of two or three years before it causes any symptoms, such as cough, fever and loss of weight, and before the physical examination with the stethoscope will reveal any abnormal physical signs.

When a shadow appears, the x-ray has served to bring out disease of some kind. People everywhere should know not only of the great value of the x-ray examination but also its limitations. There is nothing mysterious about the x-ray examination. Physicians know how the healthy living lung appears when it is photographed, and any density which develops in it so as to cast a shadow on the photograph is looked on as disease. The nature of the disease cannot be determined with accuracy from the shadow alone.

Once the shadow is found, the most difficult part of the examination lies ahead. Now it is the work of the physician to determine the cause of the disease. This may be done within an hour. For example, the germs may already be abundant in the material being expectorated from the areas of disease; they can be quickly identified under the microscope. Again, it may require weeks. One should not become impatient if a long time is required to determine with certainty the cause of the disease, nor should one lose confidence in the physician who frankly says he does not know the exact cause but is seeking it; he is simply manifesting honesty. Small areas of disease due to the chronic type of tuberculosis may cause no cough; therefore, there is no material expectorated that can be examined for the germs of tuberculosis. When the area of disease is of recent development, one may find the germs of tuberculosis in one half to three fourths of these persons by washing out the stomach after one or two meals have been omitted and examining the washings. If the germs are not found, the physician still would not know the cause of the disease. If the person being examined is in the cancer age (over 35), the physician may decide to look into the trachea and the bronchi as far as possible with the bronchoscope and may even remove a small piece of tissue from the suspected area to examine under the microscope; it is only the microscope which will determine with accuracy whether the condition is cancerous. Careful studies of the blood may throw some light on the cause of the disease casting the shadow. While the single x-ray examination does not reveal the *(Continued on page 564)*

GETTING READY for MARRIED LIFE

By HOWARD DITTRICK

YOU who read this may be hesitating on the threshold of engagement, or you may have taken that step and are studying from all angles the further step of approaching marriage. Or you are conscientious elders concerned with instruction of young people in your charge. You want to know what this generation is learning prior to marriage in the light of social, economic and scientific advances since your marriage was consummated.

I shall approach candidly many topics I would prefer to reserve for intimate discussion in a physician's consulting room, where indeed final consideration of any valid doubts must eventually take place. While we have emerged from the time when public discussion of marriage and sex was tabu, many personal problems, physical and psychologic, must remain adapted only for private consultation with a physician by one or both of the engaged persons.

That these young people do come so frequently to doctors' offices, and that they come in such a fine spirit of frankness, is evidence enough of the mental and spiritual caliber of our youth. They come sometimes on the suggestion of parents, but as often inspired by their own judgment, earnestly seeking to get the most out of married life. They are usually highly trained, so that they recognize the need and the safeguard of competent advice. Indeed the gesture augurs well for the success of their marriage.

Let us begin by assuming that you have fairly recently become engaged and that you have just begun to face squarely the responsibilities of the marriage you are about to enter. Perhaps you feel humbled and a little overwhelmed by your ignorance of home-making skills. You want your married life to be on the highest cultural level you can achieve within your means. But remember, while these skills are requirements in a happy marriage, they can be learned even after marriage, assuming the will to succeed, the intelligence to learn and the self discipline to stick to a plan be present. We shall take these for granted as prerequisites for happiness in every marriage. You will acquire together the material furnishings, through which you will express your ideals, your dreams of home life and your plans for its permanency. This spells your earliest interdependence. This planning together is psychologically sound and entirely desirable. But your outlook on marriage should only begin there.

How much have you thought of marriage itself? Have you grasped its fundamental purposes? Certain psychologic attitudes should be developed before marriage.

Let us look at it in this way. Fundamentally, marriage is a personal association between a man and a woman and at the same time a biologic relationship for mating and reproduction. Though some marriages may be entered into for other reasons, such as family influence, social advantage or financial consideration—any of which Olive Schreiner would call a parasitic relationship—actually the basic implications of marriage are companionship, sexual intimacy and procreation. To be fit for marriage, both should be emotionally companionable, sexually normal, physically and eugenically fit to beget offspring. Your children have the right to be well born, that is, to be physically and mentally normal. You are selecting their other

parent. Both of you will wish to play fair in the heredity of your children.

To be emotionally companionable means to enjoy the community of tastes, the easy compatability of temperament based on equality of birth and breeding that have made your courtship hours so delightful. To modern educated youth these things are so essential that mere physical attraction counts as nothing compared with ideal companionship between equals. But high levels of companionship can be enjoyed independently of marriage. What makes marriage different from all other social relationships is that therein man and woman enter into the permanent privilege of sexual relationship. Marriage should reveal in this new experience the ecstatic depth of human love. A healthy and satisfying sex life is a creative enrichment of human personality. It should be the possession of every married person. On the other hand, the lack of sex satisfaction in marriage is a potent cause of ills of all kinds. Most disagreements between husband and wife, attributed to every other cause they could name, have their origin in disharmony in the physical sex life. So complex is our makeup that marriage cannot be entirely happy if it does not satisfy physical, mental and spiritual natures alike. Who could expect, merely by wishing, to play a harp on first attempt? Harmony in marriage does not come more easily. But love on its highest levels, like music, is a fine art worth the joy of cultivation.

The better to understand sex and its place in our physical and emotional lives, let us examine this biologic urge, which man must mold to high purposes of cultural life. Like most plants and all animals, we are able to produce offspring only by means of the act of fertilization. But we differ from animals in that they perform sex acts, and most other acts, at the behest of instinct alone. Man, climbing ever higher in the scale, replaces instinct by knowledge and will. He has an appreciation of purpose and has set up standards of self control. Animals possess this instinct, firmly implanted, only for purposes of reproduction, that the species may be preserved. Man no longer believes that the use and enjoyment of sex activity is intended to be limited entirely to reproduction. He thinks of it as one of the sacraments of life, a continued source of joy, health, self fulfilment and self expression. Of course biologically it does insure the survival of the species and the race. Thus in marriage it becomes more than a sexual relationship; it is a union of male and female for the production and care of offspring, with reproduction a fundamental purpose in marriage.

Until there is a proper appreciation by both man and woman of the sexual relation as a high fulfilment of love, as a part of the divine purpose expressed in the creation of our bodies, with their delicately adjusted members designed for its exercise, there can be no rational approach to marriage. When this level of thinking has not previously been reached, the experience of the marriage relation may come as a severe shock to the nervous makeup of the bride and may lead to deep unhappiness, even to certain neuroses and psychoses difficult to eradicate. Both should be led before marriage to a healthier attitude toward sex. Maud Royden says "The instinct of sex is not a grimy secret between two rather shamed human beings, but a great impulse of life and love." The honeymoon should not result in shock and distress, as it sometimes does, because of the bride's false and ignorant ideas of sexual relations, or because of the groom's ignorance of her psychology. Knowledge of the psychologic facts involved as well as the physiologic will make for understanding by each partner of the other and by both of their new experience, which should be the crown of their happiness.

You may ask where the engaged couple may get such psychologic and physiologic information? Of late years high schools and colleges, church and social organizations are giving occasional lectures or even excellent courses in biology and hygiene. But only recently has all this scientific instruction been available, so that some few of you may have missed it entirely. To those of you who wish to delve

deeper into this subject, I would suggest that you consult your local librarian or the bibliography at the end of this article.

About this development of sex, when does it begin? The spark of sex is evident much earlier than puberty. The little girl playing house with her dolls, the little boy dreaming of heroic deeds as policeman or fireman are exhibiting manifestations motivated by the sex instinct. They have, we hope, thoughtful parents who answer truthfully their naive questions and lead their minds toward taking sex for granted as a part of life. Even during childhood, interest in the opposite sex is aroused, following normal healthful lines in most children but developing disproportionately in a few. Meanwhile, up to the age of puberty the endocrine glands have been actively promoting growth of the body. These glands produce chemical substances known as hormones, which pass directly into the circulation. Therefore they are known as ductless glands. Those of interest here are the thyroid, the pituitary and the adrenal glands, the ovaries and the testicles, each secreting a special hormone. Up to puberty, usually around the age of 12, these hormones stimulate body growth; but with the onset of puberty, there is developed a new substance known as the sex hormone, which produces changes in the whole bodily form, in the functions of the sex organs and in the behavior of the individual. In voice, figure and general conduct the young person becomes attractive to the opposite sex.

In the normal growth of sex, there may arise occasions when awareness of the sex urge causes deep disturbance of the personality, perhaps resulting in needless shame and humiliation to the uninformed boy or girl. Sex desire is a natural characteristic of every adult; it should cause no embarrassment; it is as normal as breathing. With a full knowledge of sex it will assume its proper place in the mosaic of life.

Among Anglo-Saxon races the whole subject of sex has until recently been hedged about thickly by a conspiracy of silence. This results in an attitude toward sex that is unhealthy, ignorant and unsound. Realizing the harm that has been done by this treatment, knowledge and instruction have been more and more widely offered to atone for earlier neglect. No longer do our young people need to be ashamed of sex.

Again, the old time moralists preached sex restraint entirely to men, recognizing nothing of the strong sexual impulse in women. Both men and women need to cultivate the discipline of this impulse to the end of what Chaucer calls "fine loving," and to what Havelock Ellis calls "the larger ends of fine living." The activity of sex is displayed in the person's whole organism, physical and psychic. It cannot and should not be abolished; but it can be regulated and controlled until it enriches the whole personality immeasurably. Self control never harmed any one.

All that I have said of sex concerns merely the normal development prior to marriage. While I consider its deep significance to mental and spiritual health, its power to motivate high ideals and to ennoble life, let us look for a moment at the alternative to marriage. How shall that deep current of our lives be kept serene, if marriage does not occur?

Modern civilization has found no good or satisfactory ways of utilizing sex energy outside of marriage. Under our present code of moral standards sexual relations out of wedlock are socially and legally forbidden. These standards have been set up as protection to the individual and the race after centuries of trial and error. They spell civilization, self restraint, culture. We cannot go back to the jungle. There have always been those who thought themselves and their emotions higher than conventions and law. Perhaps some have found abiding happiness. I have never known one who did, and I assure you my opportunity to observe these cases has been wide. Many of them sought to enjoy the privileges without the obligations of marriage. These seem inseparable.

And suppose marriage is long deferred! During the last decade with economic opportunity for young people limited, their marriages have

been too long postponed. But the occasional lapse of impatient lovers into premarital relations only replaces one worry with two. The best solution for impatient lovers is to marry at once. When that is impossible, even when both are employed or when parents cannot help them finance marriage, self restraint is imperative. This will be more easily achieved if the couple will face the situation intelligently and substitute for the tempting hours of dreamy intimacy some active outdoor exercise in foursomes or indoor fun in crowds. Prolonged petting sessions, harrowing to the highly strung emotions, are better avoided. For when self restraint is lost, only in their exalted moods can they find the self approval that is necessary for mental health. There will come times when they hate themselves and each other and especially the tissue of deception they must use to cover the facts, not even their modern world would condone. Natural inhibitions, unfavorable circumstances attending illicit relations and dread of consequences make the relation neither successful nor satisfying and may color their whole future life.

Usually the nervous strain of secrecy is so great that giving up the whole love affair is the only relief possible to the girl's tortured mind. Even marriage would be an anticlimax. Meanwhile to the girl has come an awakened urge of sex that can no longer be gratified. It would normally have been postponed until after marriage. Frustration of what should have been a beautiful spiritual experience leaves her disillusioned, embittered, humiliated. When a second approach to romance comes into her life, it may be blighted by her own reaction. Neither the man nor the woman concerned in an illicit affair will ever again feel so spiritually fit to marry. No camouflage of modern phraseology can cover up that fact.

When premarital relations have resulted in pregnancy, criminal abortion as the way out is frequently suggested to the distraught girl. Disreputable practitioners carry out these procedures in secrecy, using ignorant, clumsy and careless technic. The result is too often infection or death. Some of the doctor's most sorrowful patients are those who have had such an infection following abortion; it resulted in sterility, so they can never again have a baby.

When pregnancy has come from premarital relations, the best solution for couples who are really in love is immediate marriage. These marriages can be perfectly happy. The time of the baby's arrival is their own business. However, do not forget that ultimately the child will probably learn of its untimely birth and that the psychologic effect on the child may be really serious. Nevertheless, it is true that first babies frequently arrive much sooner than expected and not always for the reason you think. The young people who hastily married owe neither explanation nor apology to any one but themselves. Frequently sympathetic frankness on the part of both families leaves nothing more to be said by critics. I have seen it prove a disarmingly sensible method of handling the incident.

Do not think I am regarding lightly the crisis of realization of pregnancy and need for a hurried marriage. I have seen too much of the bitter self reproach of that tragic hour to underestimate its gravity. I merely affirm that prompt marriage and not attempted abortion is the next step, assuming that the couple are really lovers and that it was their intention to marry.

Strangely enough, the reaction almost invariably found in the girl's parents takes an astonishing direction. They are so hurt in their personal pride that they are furious at her for the disgrace they believe she has brought on them. They are often so occupied with this angle that they cannot plan rationally for her situation. Some one else must think for them all.

Unfortunately this crisis in their affair sometimes reveals the hitherto unknown factor that the father of the unborn child is merely posing as a single man, secure in his knowledge that he cannot marry the girl in any event. Or other barriers to marriage may arise. A touching case was that of a young English woman whose work called for her to move far from the city where she had been employed. Her lover promptly transferred his affections to the younger sister who remained. The new affair developed so rapidly that they wrote of their engagement and their plans for marriage just as the older sister realized that she had become pregnant. The latter decided not to spoil their happiness and create a three-cornered tragedy. So she never told them, and they were already married when her baby was born. She did not

Rigid conventions used to protect the young girl during her years of courtship and engagement. But the modern girl is faced with two courses of action: She may travel one of two roads. Mistakes occur, sometimes accidents. Dr. Dittrick points out some of the guide-posts and highway markers set up for her direction.

question that the man would have insisted on marrying her at once, if he had known. She thus voluntarily relinquished even his support through her confinement and planned never to see the other two as long as her baby lived.

In an older generation, conventions were a potent safeguard in the lives of boys and girls, and these extended through courtship and engagement until marriage. Now these safeguards have been set aside; and long before understanding of sex and self discipline is established, the responsibility for wise behavior is left entirely to the young people themselves. That so many are self reliant is, I suppose, proof that most of them are capable of self government. Where others have failed to attain this standard of conduct, the causes are not far to seek: lack of helpful social safeguards, pro-

miscuous petting, which forever fans into flame the sex urge that must be held in leash, and the wide use of alcohol with its removal of normal inhibitions.

Returning to the normal course of the engaged couple, how can you insure that you two shall be emotionally companionable in marriage? Does it seem too late to speak of the choice of your life partner? Of course in reality this consideration should have preceded any discussion of engagement, but actually many of you selected a favored lover, and only after engagement do you realize the further implications of a marriage relation. Indeed, since the middle teen ages there has been an instinctive but scarcely rational process of selection. When two have fallen in love, unintelligently perhaps, with each other, often merely with love itself, every one but themselves can see the total absence of any common bond. For the moment they are blind, usually stubborn and, it must be granted, entirely stupid. This is no time for reasoning on the serious aspects of mate selection. It is useless. The affair usually breaks up, to the relief of every one, before it has resulted in mistaken marriage.

Instead of love, it is either idealism, wherein each adorns the other with all the virtues which they later realize never did exist, or physical attraction, where there is no mental or spiritual response to hold them steady during the ebb and flow of this emotion in married life. Physical attraction is sometimes overwhelming in its strength; but when no other bond exists, it has a terrible way of disappearing after marriage. To be satisfied with it alone is to ignore the fact that we are something more than mere bodies and is to miss the best things in marriage. If the unwise engagement goes on into marriage, it ends in obvious disaster or in that compromise which keeps up appearances in a situation filled with bitterness and contempt.

On the other hand, you ask, how can one know in advance that one has chosen wisely? I repeat, I am convinced that the modern woman discounts mere physical attraction. She looks for the deep abiding companionship that mellows with the years, making a rich and satisfying spiritual experience of marriage. She demands a mate of whom she will be proud at all times. This is true also of men.

To the finest of engaged couples, however, there may come periods of self scrutiny, strain and mental torture. They question themselves into an agony of doubt about marriage and analyze their emotions to a frazzle. It is better if, after sincerely weighing the plus and minus factors in their prospective marriage, they build up a strong purpose to make their future measure up to the highest ideals of which they are capable.

But how can they weigh these plus and minus factors? Some of them you can appreciate for yourselves. On the plus side, thoughtful people generally assume reasonable equality in intelligence, morals, social level, tastes and ambitions. It is desirable that you two be of the same age level and of the same religious group. If the latter is not true, a clear understanding must be reached before marriage and also your decision regarding the faith in which you will bring up your children.

On the minus side there may be, for instance, a known physical disability of the woman that would preclude, or endanger, either pregnancy or childbirth, so that the couple marries with the knowledge that they will be childless. Their plans can be fixed on other worthy ideals, and they can yet achieve happiness. But this is best understood in advance. The man may have some disabling condition, such as tuberculosis, which will have to be fitted into the pattern of their economic future. Prior to marriage, a couple should know any condition present which requires special planning. Any health hazard, which is likely to occur, should be thoroughly understood.

In short, they should fall in love intelligently. This requires also that due consideration should be given to that priceless ingredient of marriage, a normal, healthy sex life as the basis of married happiness. To fully attain this ideal implies that both partners shall be free from communicable or hereditary disease, mental or physical, or from any impediment to having healthy children. It implies also that they shall be free from any psychologic slant that would render them unfit for the marriage relation.

This is leading an ever increasing number of couples to seek the advice of their family physician or some selected physician equipped to make sure that their marriage relation shall be normal and shall be safely and happily begun. Frequently they go to a gynecologist or an obstetrician, trained to attend women, or to a urologist, who may be especially trained in the care of men. The family physician, who has perhaps known both individuals since childhood, who knows their family histories and the stocks from which they spring, is an excellent choice but one who is rarely available in this restless migratory age. If you find yourselves in a city where you have no knowledge of physicians, you would do wisely to call the Academy of Medicine or the local medical society and obtain names of those *(Continued on page 554)*

STAND UP STRAIGHT!

By ALVIA BROCKWAY

MOTHERS by the thousands are daily exhorting their children to stand up straight, and teachers are admonishing their charges to stop slumping in their seats. There are vital reasons why growing children should sit and stand straight, but probably most parents are only vaguely conscious as to why they are giving this advice. Of course, they are aware of the cosmetic reasons. It is obvious to any one that a child who easily and gracefully stands and sits erect presents a more pleasing and vital appearance than the child with a slumped posture.

The theater has always been thoroughly aware of the appeal of an erect posture. How many leading actors on the stage or screen do you see sitting, walking or standing in awkward, slouching attitudes? Virility and leadership are portrayed more convincingly when the players stand with chin up, shoulders back and abdomen flat.

Not only is this true in the make-believe world of the theater, but it is just as important in real life. The person who must direct and sway other men to his opinions or who must sell himself to his employer certainly commands more attention if he stands and walks precisely and erectly.

Studies of posture in school children have shown interesting results. It is definitely known that if a large school is divided into two groups, one group composed of children with relaxed, slumped posture and the second made up of children of good posture, the latter group will consistently show better school grades than the former.

These are the obvious reasons why good posture is important for the growing child—the economic and scholastic reasons—but there are other important physical and hygienic reasons why your child must be trained in good posture. I say "trained in good posture," not "told to stand up straight."

Why is it that some children naturally and without effort stand and sit properly, and others do not? Look into the face of the child who habitually sits and stands with his head and shoulders slumped forward and his back curved like an old man's. Usually you will see that his face has a tired, drawn expression. The fact is, he is tired, and he slumps because it is too much effort to sit erect.

There may be a number of reasons why he is fatigued. In some instances, the reason is not hard to find. Perhaps he is not getting enough rest to supply his needs. A growing child burns up a surprising amount of energy during the day, and he needs sleep to rebuild that spent energy. In these days there are often too many picture shows or radio programs at times in the evening when he should be sleeping. In other instances, examination will reveal that the child's tired demeanor is caused by enlarged adenoids, diseased tonsils or sinuses, faulty vision or poor elimination. Children as a rule do not complain of being tired; but it does not require an exhaustive examination to prove that they are below par.

What are the physical harms of a habitually poor posture, aside from the fact that it is often an index of other trouble?

In the first place, a relaxed, slumped posture causes crowding of many of the vital organs of the chest and abdomen. This drooping forward of the head and chest makes proper breathing difficult, and greater effort is required to expand the lungs with air. These children then are apt to be flat chested and especially susceptible to colds and bronchitis.

There occurs the same crowding of the digestive and eliminative organs in the abdominal cavity. Naturally the normal functions of these organs are hampered. Digestive disturbances and constipation can be expected to follow in time. Constipation, continued over years, lays the foundation for more serious trouble in later life, the more common ailments being colitis, hemorrhoids and gallbladder disturbances.

Standing and sitting erect require less muscular effort than the slumped posture for the normal, healthy child. With the body in an erect attitude the center of gravity passes more nearly through the center of the body and places the weight on bones and ligaments that are by nature equipped to meet this demand. When the head slumps forward, the shoulders droop, the spine curves and the abdomen bulges; then muscles must take on more and more of this burden of weight bearing, a burden that makes for fatigue and later actual deformity of certain of the bones and joints.

Many of these children have bowlegs, knock knees and flat feet. This further disturbs the weight line of the body and makes the erect posture more difficult to achieve. This chronic strain on the muscles of the feet, legs and back may be tolerated without protest while the child is young and able to adapt himself to these adverse conditions; but later these defects will assert themselves in a distressing way.

It is no wonder that your child pays little or no attention to your exhortations to stand up straight. Instead he is more apt to become bored and often resentful of your continual nagging and threats.

It is not always sufficient to remove foci of infection or to provide more rest and sleep or better eating habits to achieve the desired effects of good posture. This must be done; but even after this, still more work may be ahead. Now it becomes necessary to realine the body curves that have become more or less permanent during these months or years of faulty attitudes.

Muscles, bones and joints soon adapt themselves to continual malpositions. The stretched muscles lose their tone and strength. They are ineffective in overcoming the opposing muscles that have become shortened, thereby making it difficult and sometimes impossible to assume the proper attitude.

These children with faulty posture habits can be greatly helped by orthopedic and posture training. More and more attention is being paid to these problems, particularly in the larger schools. Many of the lesser faults can be managed by the corrective classes in school, if they are available, but such a program should be carried out under the supervision or in the gymnasium of a physician who is thoroughly trained in body statics and understands muscle action on the various joints.

These children need individual instruction, must have a clear mental picture of just what the doctor is trying to accomplish. The child must be shown over and over under direct supervision which muscles to work and which to relax.

It is not enough for parents to scold and fret because their child will not stand up straight. Specialized training, often shoe corrections and occasionally surgery are necessary before the goal becomes possible of achievement.

COMING in JULY

WITH THE COMING OF HOT WEATHER, one of the first prospects one faces is the problem of how to keep cool. You may say, "We have a swimming pool in the neighborhood—we can go swimming when it gets hot." But you who have sinus or ear disturbances have another prospect to face! You can't go splashing and dashing about, like others. While swimming may be good exercise for your muscles, it annually causes much trouble in the ears and nose.

Carefully, you must learn to exhale just at the moment you strike the water, if you dive in. If you jump in, you must never forget to hold your nose closed. For the novice swimmer, mouth breathing is best. Such are the detailed instructions given by Dr. Lewis J. Silvers in his article entitled "Swimming Safety" in next month's *Hygeia*.

Do you know how to recognize the first symptoms of ear infection, which so often lead to a mastoid operation and impaired hearing? There is always a definite increase in the incidence of ear involvement during the months of July and August, so read Dr. Silvers' article, and don't be caught!

"DON'T SUCK YOUR THUMB, JOHN!" How many times have you heard some one give this admonition? And have you noticed—how much good does it do? If you want to know how to break this habit, read Dr. William I. Fishbein's article in the continuation of his popular series in the Child Care section of the July Hygeia. *He tells why children suck their fingers; and how, once the reason for it is known, the habit may be successfully broken. Other interesting facts are brought to light, such as: More boys than girls have the thumb-sucking habit, and thumb-suckers are seldom bothered by insomnia.*

Don't miss this enlightening article, for armed with the knowledge it holds for you, you may successfully meet this problem.

THE HARDEST THING IN THIS WORLD to do is nothing! Have you ever tried? Don't read. Don't sew. Just sit there—and meditate! To meditate is truly to loaf. You lie on a hillside, the sun warm at your feet. Or perhaps, like some great men of old, you sit with a fishing rod in your hand.

"Man is like unto a potato field. He needs to lie fallow now and then, to fertilize the soil. Great deeds may make a noise in the world; but that is only because a great force strikes an obstruction in its path and overthrows it. Great deeds are born in silence and meditation. The stillness of a philosopher, a poet, a statesman is the stillness of the spinning top." Thus saith the author, Kenneth P. Wood, in "The Psychology of Loafing" to be presented next month.

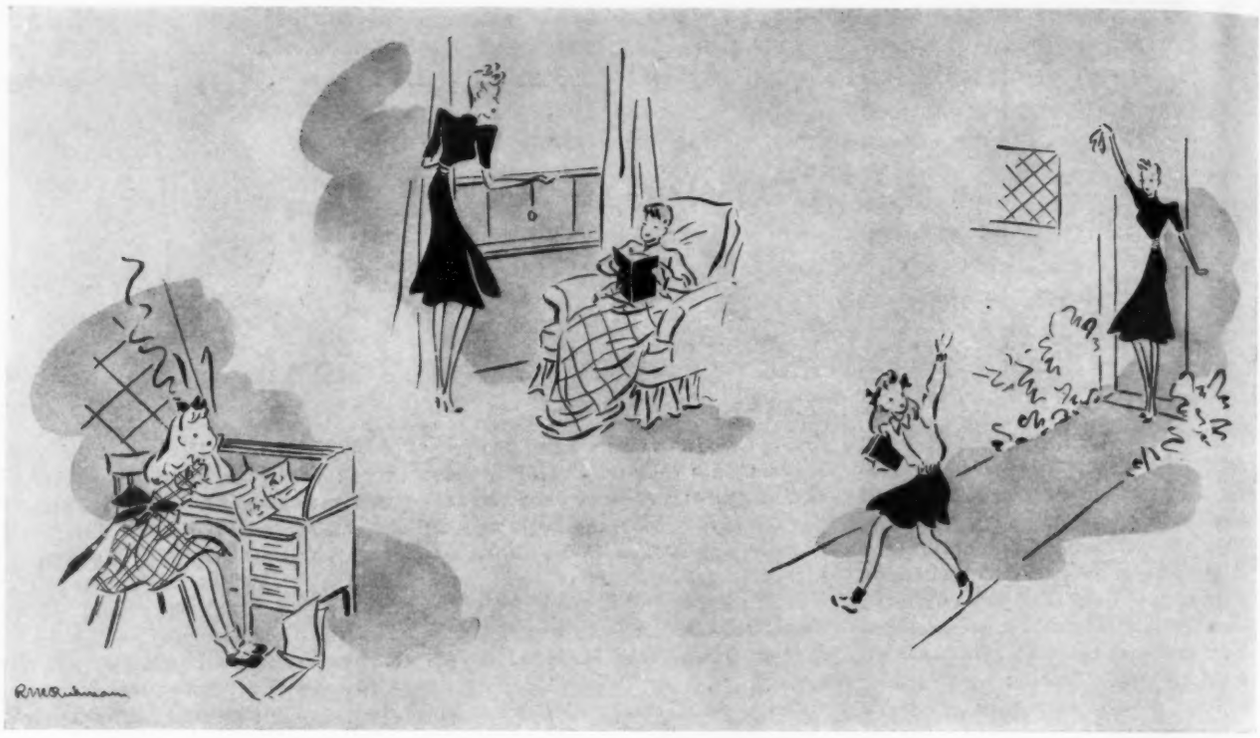
Genuine loafing is the happy employment of time that is legitimately yours. Skill in loafing, possessed by only a few, is acquired by storing the brain with fancies, with a multitude of interests in the small things of the outer world, by possessing a sensitiveness to impressions however fleeting, a power of reflection and quiet thought.

How are your crops? Do you always reap the harvest in results you want? Perhaps when you have read this article you will know how to improve on them. Watch for it next month.

YOU THOUGHT that if your tooth ached or your gums bled, it was always your teeth that needed attention, didn't you? But today, dental science finds that many of the ills that beset the mouth must be corrected elsewhere in the body. Lester R. Cahn, associate professor and head of the division of oral pathology at Columbia University, can tell you that sore teeth, sores on the gums, tender and bleeding gums and even cavities may come from diseases of organs remote from the teeth. Actual case studies are cited which graphically demonstrate the truth of this. You will have a much better understanding of the part your teeth and mouth play in the health picture after reading this article.

HE HAS A PLAN for treating the cause, not the result, of so much suffering of victims of hay fever due to ragweed sensitivity! Are you interested? You of the unblessed 1 per cent of Americans who go about with streaming noses and running eyes during the blooming season of this "most ornery of vegetables"—you should read what Ramsay Spillman has to say. His article is entitled "It Floats Through the Air—" but he has a plan by which he can stop it from floating through the air. Don't miss it!

OTHER ARTICLES on the schedule are "Highway Health" by Beulah France, R.N.; "The Child Who Has Heart Disease" by Louis Faugeres Bishop Jr., M.D., and "How Safe Is the Roadside Restaurant?" by J. E. Browell.



PROTECTING the HEALTH

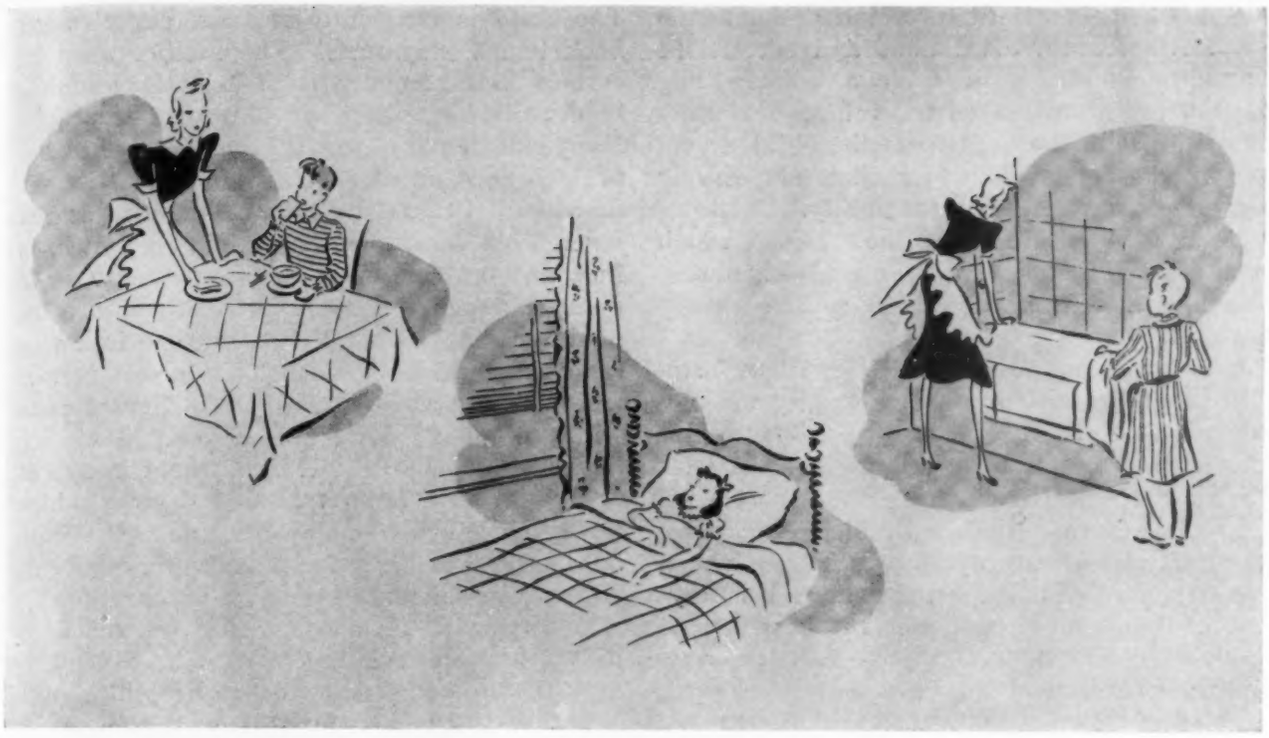
THIS is a wonderful age in which to be a parent. So many things formerly enjoyed only by the rich are now available to families with limited incomes. It is a happy knowledge for any parent that he can offer his child many advantages which he himself was denied. Improved motion pictures, magazines, books, radios and an increased opportunity for travel have opened up the world of adventure for the average boy and girl. It is the good fortune of many parents to discover these joys anew through the eyes of a child who approaches life with a healthy, intelligent curiosity.

Every new privilege, however, brings with it additional responsibilities. The same modern inventions that have made information and education available have also contributed to the increase of strain for the rapidly growing child. Desire to see one's son or daughter compare favorably with other children around him may cause parents to urge increased effort. The result is likely to be a nervous, irritable child who is unable to enjoy the very advantages the ambitious parent has sought for him. Even though the home has become less the center of family life, it still remains the source of the strongest guiding power and responsibility for leading the child to the greatest ultimate usefulness and happiness.

The job of being a good parent requires more than physical care, but it demands that as one of the minimum essentials. Health is not the end in life, but it is the means to the most desirable end, a prerequisite to realizing the greatest riches from living. Like happiness, it must be found by the wayside, not sought too earnestly.

The child's contribution to his own as well as to community and racial health depends on two things—habit and attitude. The foundation for both of these will be laid in the home. Long before the child has any realization of the reasons underlying standards, long before he is capable of understanding the basis for rules, he begins to form habits. The first years are extremely important in determining the patterns of behavior. Even after school begins, the mother is the most influential agent in helping the youngster establish desirable modes of conduct. It is of the utmost importance that such things as eating regularly and cheerfully what is given him, hygienic sleeping, regular elimination and cleanliness be rigidly adhered to until they become sufficiently habitual as to provide little difficulty for either the child or mother.

Especially should cleanliness be stressed. Soap and water are among the best weapons for fighting harmful bacteria. It was most dis-



of the CHILD: the parent's responsibility

By ELIZABETH COTTON

turbing to read in a recent report that only 60 per cent of the children of elementary school age washed their hands before meals and after toilet. It can be supposed that a number of those did not do so regularly, but only occasionally. In addition to the hygienic value, the personal attractiveness to be derived from cleanliness cannot be ignored. A seventh grade girl of 16 reported that she had never had a bath in her life but had never been ill a day. It is true that she had suffered no ill effects physiologically, but her unsightly appearance was a definite social handicap. A mother whose own child is immaculate in his personal habits should encourage him to help some other youngster appreciate the value of cleanliness.

Emotional and mental habits are of inestimable importance to the physical health. Children are great imitators, reflecting to a high degree the conduct of the father and mother. If a boy or girl sees his family display temper, he cannot be blamed for trying the same thing. If the adults around him are even tempered, calm, courteous, fair minded, kind and honest, he is likely to develop many of the same qualities. It is well to remember the following general rules in this connection:

1. Try to be what you want your child to be.

2. Expect the right thing of your child, and praise him when he does it.

3. Help the child to become independent of the help of others, physically, mentally and morally. Do not baby him. Allow the child to make as many decisions as he can without an undue emotional strain. Really important decisions should not fall on the shoulders of a child unprepared for them by experience.

4. As far as is humanly possible, always keep promises to a child.

5. Do not show fear in the presence of a child nor suggest fears to him.

6. Try to correct the child when your disposition is normal. Losing one's temper lessens the effectiveness of the punishment.

7. Respect the child's plans, opinions and privacy. Remember that he is a person with interests and certain rights of his own.

8. Help the child to acquire the habit of liking and getting along with people.

The tone of the home should be kept peaceful and quiet so as to encourage relaxation and prevent nervous tension. Voices that are calm

and subdued give children confidence and assurance. Unpleasant discussions and corrections should be avoided at the table, and the settling of difficult problems such as that of family finances should be kept from the child except as is necessary for him to realize and assume a certain share of the responsibility. Fussiness increases fear and destroys the serenity, which is the basis both of health and happiness. Nagging, therefore, should be conscientiously avoided.

It is important to the child's emotional stability that he have some opportunity to commune with himself. If it is not possible to give him a room of his own, there should at least be one where he can go to be alone. In addition he should have a desk or table, some place absolutely free from prying eyes, where he can keep his most dearly beloved possessions. Collecting things he cherishes is the best way to teach a child to value and respect the property and rights of others.

The first consideration for the child's physical welfare is protection from contagious diseases. Effort should be made to see that assets exceed liabilities by having infected tonsils and adenoids removed, by correcting eye and ear defects, checking dental deficiencies and doing everything possible to bring the child physically up to normal. Parents should use the measures at their disposal to prevent such diseases as diphtheria, smallpox, scarlet fever, typhoid and measles. The idea that every child has to have so many diseases and might as well have them and get it over is obsolete. Scientific research has provided protection against a great many of the most deadly and dreaded enemies. It is the duty of every parent to take advantage of these preventive measures for his child.

Even the most zealous efforts, however, are not always successful in preventing illness. In addition to the care given the bodily needs of the child, the mother should see that he does not become unduly nervous and upset because of environmental conditions. A person who is ill needs to be left alone, whether he be child or adult. The room temporarily turned over to the patient should be stripped of all unnecessary draperies, rugs and furniture and kept as clean and cheery as possible. The child should not be annoyed by constant questions concerning what he wants or how he feels. Neither should he be allowed to get the idea that being ill is a privilege because of the undue attention he receives.

The period during convalescence before the child is able to return to school is a difficult one both for him and the rest of the family. The child is frequently restless, eager to get back to his playmates. The mother must be certain that recovery is sufficiently complete before allowing the child to return to school. Many children are injured permanently because of ignorance or carelessness following illness. So-called rheumatic fever, tonsillitis, scarlet fever, diphtheria, measles, whooping cough, in fact any infection which causes fever or a systemic reaction may permanently injure the heart. No child should be out of bed following such an illness until his temperature is normal from 24 to 48 consecutive hours. Severe cases with prolonged fever require longer. Some one has suggested that the child be kept in bed as many days as the number of degrees which the temperature was above normal. It should not be necessary to warn mothers that children with a severe cold should never play vigorously.

Without allowing the child to feel that he is the center of interest because of his recent illness, the mother should plan to keep him busy, at the same time guarding against fatigue. It is of the utmost importance that the child be treated as naturally as possible. He should have a few responsibilities and be taught not to expect favors from other members of the family just because of his illness. Children are quick to take advantage of such situations. I remember one youngster of 3 who was much interested in the daily testing of his hearing to see whether it had been affected by scarlet fever. At least a month after recovery he ignored his mother's corrections, remarking that he couldn't hear her when she talked to him like that.

Even though an illness may not be severe enough to cause permanent injury or temporary disability, any malcondition reduces the child's efficiency and contributes to his general unhappiness, as well as that of his associates. One's disposition depends to a great extent on the state of his health. An irritable child is usually an ill one or one who is fatigued to the danger point. There is no value in sending a child to school if he is not well, nor in urging him to further effort when he is tired. A perfect attendance record or a grade higher in his mark will not compensate for the child's driving himself when he is not in good physical condition. Wise parents will not jeapordize a child's health in the pursuit of academic achievements or popularity, for they realize that the real foundation for happiness lies in a busy, useful life, in which organic vigor is an important factor. They constantly strive, therefore, to help their child attain the highest possible perfection of health.

[Conclusion]

Acme

PHYSICAL FITNESS AT West Point

Since they believe that a man should "Do a thing; do it right, and be quick about it," he must have complete coordination of mind and body, says
WILLIAM H. BAUMER JR.

"JUNE WEEK" at West Point is one of excitement. Each cadet has something to look forward to: The graduate has a new life beckoning; the second classman has his senior year; the third classman (sophomore) has the sole cadet summer vacation, and the Plebe will get upperclass privileges.

"June Week" is also a time of ceremonies, of parades, of formations and of family visits. Yet with all the color and the drama of the final days, there is one prosaic formation that means much to the Plebes. Their annual gymnastic show is the initiation into the cult "West Point" —a recognition of their full-fledged membership into that healthy and unquestionably fit body of men.

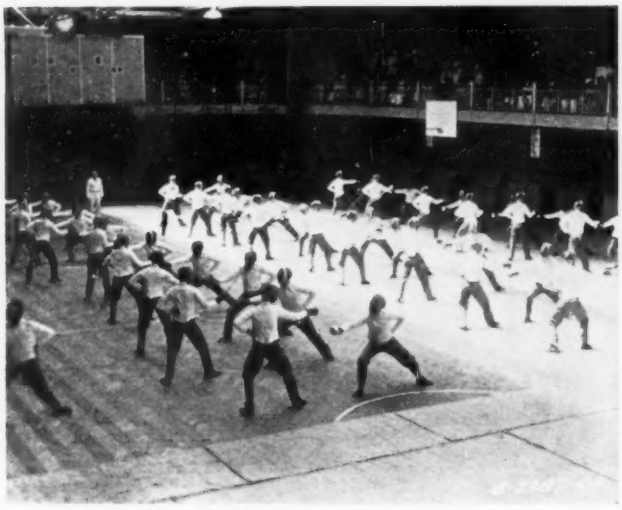
Here they come in their gray slacks and long-sleeved jerseys, their chests bulging slightly more than necessary, their muscles rippling easily but not ostentatiously under their well clothed exteriors. Their invigorating jauntiness communicates itself to the visitors who straighten en masse in acclaim to these robust youngsters.

Outwardly the show is similar to a gymkhana which one can see in the athletic clubs of any city. The 450 men march in quickly for this last Plebe gymnastic performance. At a sharp command from the cadet in charge, they separate on the main floor of the building into groups of fifty or a hundred.

One group goes through the Indian club drill in silent precision; another lines up in front of the parallel bars. As they approach this apparatus one after another, their boldly printed names on the back of their white waist belts adds personality to their performance. Cadet Dow goes up into a straddle mount on the bars, moves into a shoulder stand, then rolls forward to the straddle position with his thighs in front of his hands. A few precise movements follow, and then a swinging dismount to the rear is accomplished. Cadet Campbell follows; then Cadet Burns. The line moves unerringly forward, and one after another they swing off the apparatus to an unheard rhythm.

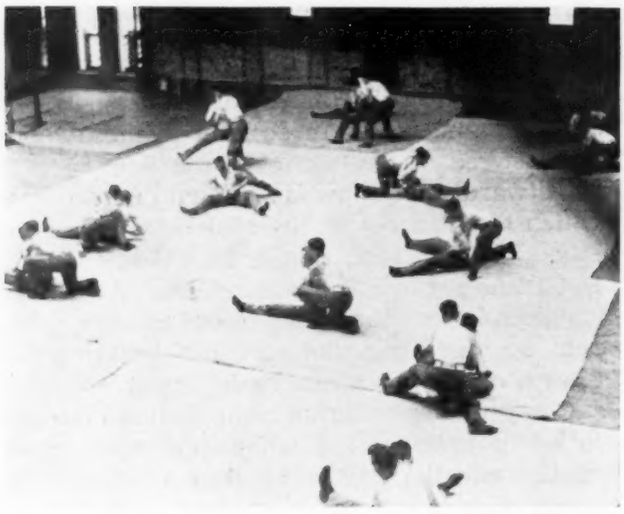
Another group faces the horizontal bar; others, the side horse, the flying rings and the vaulting bar. Mats are laid on the floor for those who now begin to tumble, going through the routine of forward, shoulder and back rolls, winding up with a few cartwheels. Up the 20 foot ropes all the men climb without the use of legs—some speedily, others slowly, showing the first break in the rhythm of performance.

Now others approach with chest protectors, gauntlets and screen face masks for fencing

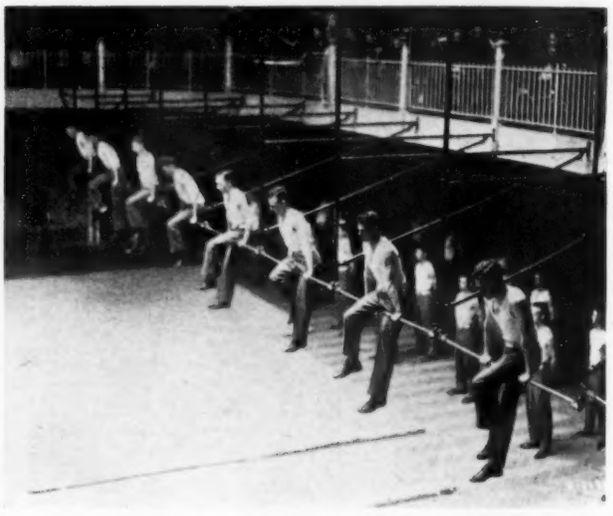


The fundamentals of fencing with the foil are taught the cadets their first year at West Point.

Proficiency at the flying rings is part of the gymnastic requirement for cadets.



"There ain't no holt what can't be broke"—says the doctrine that directs the wrestling Plebes.



The horizontal bars are the fulcrum for their somersaults—backward or forward.

It is "To the left, to the left" in the boxing room; then one can hear numerous socks of leather meeting something that is not always more leather.

with the foil, épeé and saber, each weapon requiring a slightly different technic. While this is in progress, the boxing group properly spaced makes the movement of "To the left; to the left," each time shooting a left jab or hook into the simulated opponent's face. Then they close for the real fighting. Wrestling follows a similar procedure, after which the entire class lines up for calisthenics under the direction of some of its members.

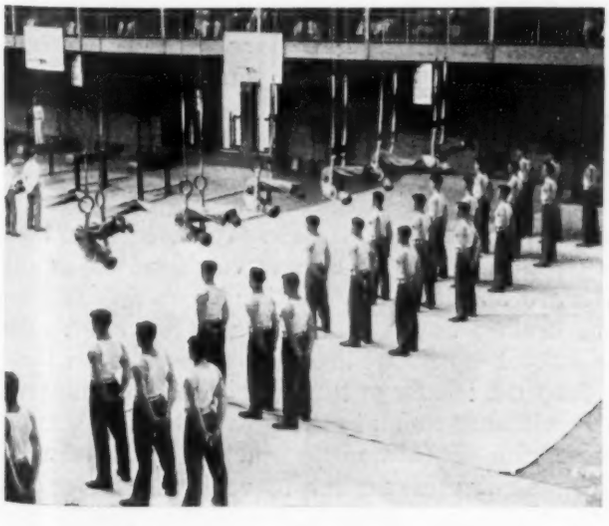
This spectacle is interesting not only as the culmination of a year's intensive physical training but also as a symbol of the Academy's constant emphasis on the necessity for uniformly good health in the cadets. In itself, the performance is an expression of the physical development of the first year; but, as a group, the cadets glow with a health that is more than mere physical prowess can produce. This gym-

nastic training is part of the comprehensive physical education plan of West Point. Its importance in the schedule is shown by the fact that Plebe gymnasium is a regular part of the curriculum, following the mathematics class each morning—a true exemplification of the Roman expression of *"Mens sana in corpore sano."*

Each cadet has been built up in body and corrected in posture so that he is an expression of positive health. The prevention of disease goes on concurrently with this purely physical training. The purpose of the athletic life at West Point consists of three phases: First, the cadet must be developed physically; second, there must be implanted within him the urge for lifetime fitness, and, as a correlative, he must be taught through instruction and practice how to teach others to take care of themselves physically and hygienically.

Here is a Plebe leaving the annual gymnastic show. Let's see how he has been affected by this physical education plan.

Our movies and books have consistently shown the newly arrived Plebe at the United States Military Academy as an above-average American youth. Perversely, a "hard-boiled" upperclassman asks this Plebe to constrain his body into the position of "attention," even though he is all sinew and strength and formerly a star prep school athlete. On the contrary, these new arrivals are actually a cross section of America—of nationality, sectionalism, environment and size. The fact that they have passed a rigorous physical entrance examination is not proof that they are in physical trim. Therefore, the Academy receives these men in an impersonal, apparently cold manner far different from the usual college greeting. They are on trial physically as well as mentally.



It is not surprising then that the upperclassmen request the Plebe to take up an unusual course in posture-straightening, even though the position seems constrained to the youths. A year of strange orders to "Pull in your chin, Mister; squeeze your shoulders back; reach for the sky with your 'trunk'; pull your wings into your sides, Mister; drag in your stomach" are the proving ground for these cadets. Posture is corrected if it is possible, for it is evident that mental and physical health are promoted by good posture.

If the methods used in this physical training and education are not those of other physical directors, remember that all these Plebes are in the best of health; they live ruggedly and are geared quickly to the strenuous life. From the victim's point of view, the stiffness of the muscles wears off in a week. After that the Plebe expects to be told if his spine is not straight, if his chin is "out in the breeze" and if his shoulders are round.

John Dow, our fresh-faced Plebe, had arrived from the East on July 1. He had previously heard much of West Point, seen pictures of it, had the jump on his country classmates, so he thought.

"Mister, from this moment you will double time everywhere you go. Next June you will be relieved of that necessity."

"Yes."

"Just a second, Mister. You mean, 'Yes, sir!' " The tone of the superior's voice indicated that one must understand.

John Dow was taken to his room on the double time, or at something like a trotting pace, with the upperclassman on his heels. Unnecessary luggage was deposited there. "Don't sit down, Mister. You'll need bedclothes, a mattress and all the accessories." John Dow, now new cadet, went after these accessories—on the double. It took several trips, and each time that John slowed down to catch his breath, an upperclassman appeared. Strangely, these veterans didn't lose their breath.

John felt like an athlete getting in trim for the football season or for a championship bout. Next they hurried him to the barbershop for a military "trim." Then to drill in his hot wool clothing.

At meal formation there was inspection for clean linen and for shined shoes. In the mess hall, the Plebes sat on the front few inches of their chairs, in a prim, straight way. In common with stenographers and pianists, they found, after a few meals, that the straight spine was the most comfortable sitting position. The Plebes were now urged to eat slowly, as many in

In the intramural soccer games all classes of cadets may participate.

this new existence felt that the double time also applied to eating. For those who did not heed the advice, there was the request to "eat by the angles," which meant that each bit of food taken on the fork must be lifted to the mouth as if it were climbing a flight of stairs. Then the fork was to be placed on the plate and the hands folded under the table before another bite could be taken.

At 8: 30 p. m. on the first evening, there came a strange summons. "All Plebes will form in the shower room immediately with soap and towel." After a cleansing bath, their feet were inspected by the upperclassmen for blisters.

John Dow smiled at this recounting of rigorous past events. He remembered how incensed some of the other Plebes were at this apparent mollycoddling. Now he knew that no chances are taken that new men will handle their own sanitation. Then, too, one of his classmates had later observed that, "A bath may not necessarily increase your physical fitness, but it surely enhances your social fitness."

Within a week, the new arrivals were living on a regular routine. There was drill each morning, several changes of clothing, minor tactics in the hills and calisthenics. By noontime it seemed they had put in a day's physical work. Immediately after luncheon, they joined the "mad dogs and Englishmen" in the afternoon heat, while they went through more maneuvers. Throughout all this schedule of activities, they were still double timing, or trotting, everywhere, sitting up straight in the mess hall, pulling in their chins and raising their chests.

At 3 p. m., they turned out for recreational sports, such as soccer, lacrosse, football, track and baseball. Each sport was played for one week, and each man participated in all. Older cadets taught them the rudiments and the basic rules of each sport before allowing them to play. Since the cadets participate with other cadets of their own size, they have some spirited games. The transfer from one sport to another is a great leveler too, for the expert prep school football and baseball man often finds himself very inexpert in lesser known games such as lacrosse and soccer. This wide acquaintance with a variety of sports is continued later in the intramural system.

After the 4: 15 p. m. dismissal from recreation, there were forty-five minutes until parade. It took the Plebe that length of time to get into his dress coat and starched white trousers, to clean his rifle, shine his shoes and brass buckles. Then more perspiring on top of his hurried bath. The new second year class waited expectantly and anxiously to give the new class the dose they had received as Plebes. There is nothing personal about this straightening of the Plebes. It is only a stringent effort to cast them in their easy mold of attention.

In August, the Plebes made further use of their legs on a long hike. Upperclassmen saw that the new men took proper care of their feet, that they did not drink too much water on the march, that they pitched their tents on hummocks. After a week of this outdoor life, the new cadets moved into their fourth floor rooms in barracks. They were expected to take the four flights of steps at the double, two steps at a time. To increase the difficulty, they could not touch the banister. It sounds severe, but after a short time the Plebes became accustomed to that pace. In fact, many of them continued this stair-climbing practice after they became upperclassmen.

At first the new arrivals lost weight—excess fat—but soon the exercise and all-American appetites returned them to normal. The gymnastic department, called classically the Master of the Sword's office since its inception in 1816, measures each man at entrance and twice more during the year.

As guardians of this Plebe group, the gymnastic instructors watch out for men exhibiting any unusual sluggishness or any apparent difficulty. Also cadets newly released from the hospital are put on corrective exercises, and there are special exercises for those who have had broken bones. The idea of constant medical check-up individually is impressed on the men by the Master of the Sword. A close supervision will save much in the prevention of disease, and if the cadets handle much of their own supervision in this matter, there is less chance of their

feeling that they are being treated like china dolls.

The Master of the Sword has the goal of coordinated physical and mental health and the education of his charges. He directs all physical training except that on the intercollegiate field. His work includes Plebe gymnastic work, the check-up on this ability two years later during the second class year, the supervision of compulsory intramural athletics, the operation of all intercompany and interclass athletic competition and the supervision of the many available voluntary sports.

After measuring the cadets at entrance, the gymnasium group begin summer calisthenics that are designed to stretch and to ease those newly used and now stiff muscles. Chest development is stressed, and there is much deep breathing practiced. The cadets' legs require little attention at this time or later, for after taking the oath of admission, they are reduced to four years of man's earliest locomotion. They walk to drill, to meals and to classes. When out with their best girls, they still walk a great deal. As if this is not enough, some with cameras on their backs take a soldier's holiday during their spare hours.

The "trunk" exercises are particularly important during these early days, for the Plebes, while sitting at attention in the mess hall and standing so in ranks, are bringing into play many muscles about their spinal column which have never before been extensively used.

These movements of spine straightening and retraction of the chin become so habitual to West Pointers that they become involuntary habits for the remainder of their years. Head waiters can add another leaf to their knowledge of people. General Pershing is an excellent example of the cadet and officer whose chin has been carried back at the correct angle and sufficiently far back to straighten the spine at the nape of the neck. He never has his chin in the air in the falsely assumed position of attention which some persons affect, nor is his chin on his chest, even though the years and his recent illness would seem to give him reason for letting it fall slightly.

In September, the emphasis of the Master of the Sword's program is on the development of the cadet "setup" to a fine point. This position of attention was created out of the experience of generations of cadets and was crystallized by the most famous Master of the Sword, Col. H. J. Koehler. He it was in the dawn of gymnastic effort and the commencement of comprehensive athletic and conditioning plans who developed this famous cadet position of attention. First of all, he insisted that the individual stand squarely with feet turned out equally and forming an angle of 45 degrees. The legs are straight without stiffness, and the person is alert enough to dodge a sudden swinging fist.

One Master of the Sword of ten years ago made this position important to us by the strategem of commanding "jab" when we least expected it. Every man was then to thrust his clenched fist across his body toward the left shoulder. Naturally, no one was ever quick enough, and there is always that rejoinder in our ears, "You're all asleep." The cadets liked it, and some time later when they saw this former mentor on troop duty in Virginia, an entire class executed that particular movement as one man and simultaneously yelled, "Jab." The officer smiled approvingly.

In this distinctive setup, the cadet's trunk is straight, with the spine like a pillar from its base through the nape of the neck. In order to achieve this last position one must lift his abdomen and pull it back with his stomach muscles, then draw the shoulders backward slowly and surely. In the days before the outlawing of hazing, the cadets were accustomed to try the individual's ability to squeeze his shoulders back by placing tissue paper between his "angel's wings" and requiring him to hold the paper there. As the shoulders go back, the elbows will naturally flare out into what the upperclassmen refer to as "flight" preparedness. By squeezing the elbows into ones' sides and reaching for the ground with the loosely joined forefinger and thumb tips, the arms will come into the correct position. "Pick up the teacup," is the expression for this position of the fingers.

The neck is carried to the rear into the position that will make the entire spine straight. This gives some men a surplus of chins, which

Tennis receives emphasis during the last year as one of the useful sports for years after graduation.

is another reason for chiding Plebes. The eyes are straight forward, and the position is one of complete readiness.

The first attempts to assimilate the basic rules of the golfing stance are a similar experience to the new Plebe's initiation into the mysteries of the setup. Of course, in golf, if the correct position were given you by the instructor day after day and your friends (and enemies) reminded you of your stance every waking hour of the day, it would become habitual for you to do everything correctly, and there would probably be more good golfers than the sport could hold.

Some of the positions assumed by the Plebes are as ludicrous as those of the novice golfer.

When some cadets first stick out their chest, they find an equal and opposite reaction at the other end. Some pull their shoulders back so hard that they bend backward like a reed in the wind.

One important part of the cadet position of attention is little mentioned at West Point, possibly because it is so obvious to all the cadets: the retraction of the abdomen by the strong muscles. These muscles unknowingly receive much attention by the cadets, for many of the exercises are designed to tighten these muscles. Two favorite exercises are done while lying on the floor: One is the familiar bicycle riding; the other emphasizes the slow raising of the legs without arm aid. Then, because of the continuous tension of the abdomen, the muscles grow tight around the stomach. For this reason you will practically never see a West Pointer of any age who has a business man's abdomen—the middle-age spread toward the dining table. In checking off the Army officers you are acquainted with, remember that one in three are West Pointers. Of the 11,334 graduates of the Academy in 137 years, some 7,517 are living. Practically all of the living graduates have had this training in setup and in gymnastics, for physical education has been compulsory since 1885.

From the first days, a cadet is taught to hold his diaphragm in by his abdominal muscles and even to walk and run that way for practice. Try it on your own physique. This retraction of the abdomen is added to that of the chin and to the spine straightening as involuntary habits of all West Pointers.

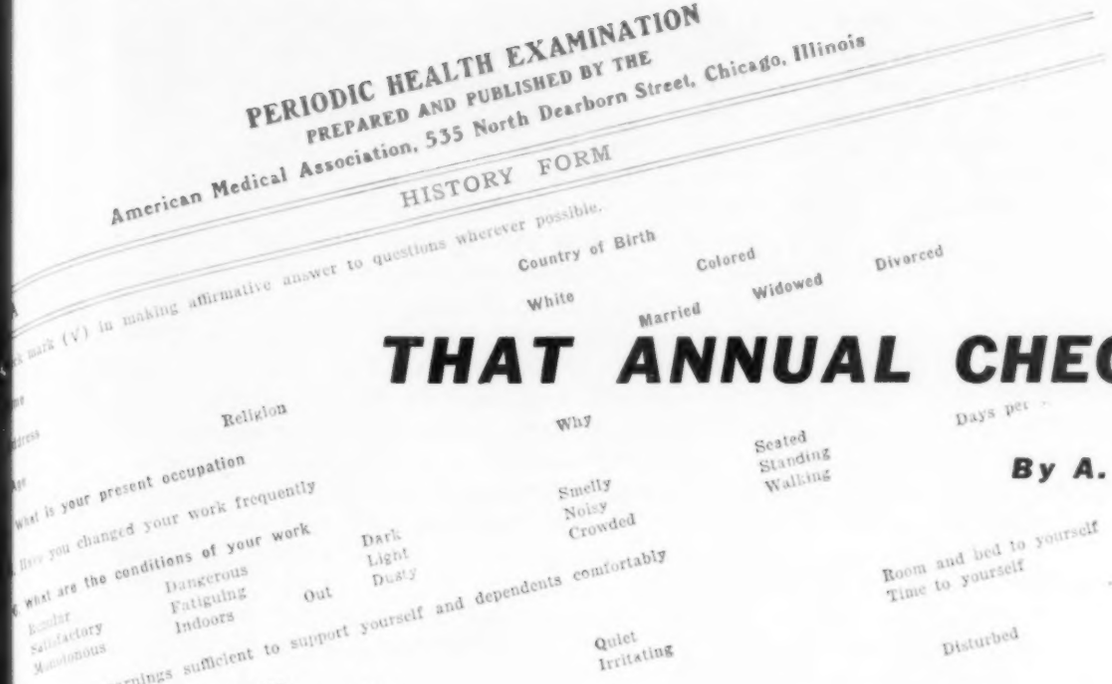
Continuing the work in the Plebe gymnasium course, the Plebes climb the 20 foot ropes, vault bars the height of their shoulders, chin themselves six times in succession, push up four times on the parallel bars. There are also the side horse, high bars, flying rings and the tumbling mats—on all of which they must learn simple exercises. No man is excused, and even though the exercises are simple, every man must "qualify" in every one of them. About 1 per cent fail on the first test but qualify with additional instruction. Each cadet is graded in gym work.

While one half of the class is thus engaged, the other is divided in different special rooms in the gymnasium for other instruction. The fundamentals of fencing with foil, épeé and saber are taught in the armory. In the wrestling rooms, amid much grunting and groaning, the coaches stress the doctrine that "There ain't no holt what can't be broke," as Tom Jenkins, conqueror of the Terrible Turk at the turn of the century summarizes his art. It is "To the left, to the left," in the boxing room, and one can hear numerous socks of leather meeting something that is not always more leather. All cadets learn to swim, and many pass their life-saving tests.

In the spring, the Plebe gymnastic class must meet the following minimum requirements in an outdoor track and field meet: run 100 yards in 13 seconds and the half mile in 2 minutes, 42 seconds; high jump 4 feet, 3 inches, and broad jump 14 feet, 6 inches, and put the shot 27 feet. Again, 1 per cent of the class fails the first complete test.

That this combined posture training, gymnastic work and other varied exercise does give all cadets an improved, better-balanced physique is attested by most graduates and by many visitors. It is especially evident in the intercollegiate sport program where there is a basis of comparison. The welterweight cadet boxer is not a long armed, lanky individual, nor is he short and stubby. Instead, he is usually well formed and compact—a tribute to the continuous work of the succeeding Masters of the Sword. Incidentally, the cadet may not be the better boxer, but at least he is apparently able to accomplish other sports than that in which he is engaged. This exemplifies the West Point system of not allowing any man to develop exclusively in one sport. He may in fact be capable of performing in intercollegiate competition in only one sport; but his Plebe work in physical training and in boxing, wrestling and other sports, plus his intramural schedule, at least give him the basic ideas and a playing knowledge of each game. What this accomplishes for a cadet, both in his physical development and in his ability to coach other sports, is apparent.

While building up the individual cadet, the physical education de- *(Continued on page 572)*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HISTORY FORM
Country of Birth
Colored
White
Married
Widowed
Divorced
Religion
Why
Days per
Seated
Standing
Walking
What is your present occupation
Have you changed your work frequently
What are the conditions of your work
Dark
Light
Smelly
Noisy
Crowded
Dangerous
Fatiguing
Indoors
Out
Dusty
Satisfactory
Monotonous
Are your earnings sufficient to support yourself and dependents comfortably
Quiet
Irritating
Disturbed
Room and bed to yourself
Time to yourself
What are your home conditions
Congenial
Depressing
In a family
Alone
Your sleeping conditions
Windows open
Between

THAT ANNUAL CHECK-UP

By A. H. AARON

THE tremendous advances in medical science that have been applied to the prolongation of life, especially in the group of individuals under 40 years of age, are known to all. Our contact with young adults in high school and college makes it possible to eliminate by education, vaccination and periodic examination such diseases as tuberculosis, typhoid, smallpox and diphtheria.

Once the individual leaves school, he assumes the responsibility not only for his choice of work and method of living but also for his continued good health. But he often fails to apply the available methods of preventing disease and prolonging life. Hardly a day passes in which our attention is not called to the untimely death of some prominent person or acquaintance, which may be attributed to a preventable disease. So something should be done in the way of educating the adult group of population so they will voluntarily carry out those measures which prolong life and maintain good health.

It is my firm belief that if the diseases of the gastrointestinal tract, which includes the lips, tongue, teeth, mouth, stomach and bowels, are recognized in their early stage, their progress may be curtailed, adequate treatment advised, and many deaths might be prevented.

In a campaign for the prevention of illness and prolongation of life no better approach can be made than by a résumé of the deaths in a representative group, in this case, the inhabitants of New York State. In the past five years 656 persons have died there from cancer of the lips, mouth or tongue. The vast majority of these should not have occurred. When recognized at a periodic examination, a sore on the lip, the mouth or tongue may be properly treated by means of the x-rays, radium or minor surgical procedure. Calling attention to the irritable area on the lip, mouth or tongue, possibly from the constant use of a pipe or cigaret holder, may prevent future malignant disease. Frankly speaking, few should die from cancer involving these parts, as their early recognition —which should be easy—will result in a cure and prevent many individuals from later having a radical, disfiguring surgical operation.

Cancer of the stomach caused the death of almost 8,000 people in this state in the past five years. An individual over 40, who has always had the so-called "iron-clad digestion" or who "could eat nails," may suddenly develop indigestion, which may be continuous over a period of two or more weeks. This man should at once consult his physician for examination. It may reveal early cancerous disease in the stomach at a stage when it can be successfully removed by surgery. That this is possible is evident by the increasing number of persons alive five years after early removal of cancer of the stomach.

The short history of continuous indigestion is of greatest significance. It is the most valuable indication of the possibility of the presence of a cancer of the stomach. No x-ray or laboratory test is of more value than this warning to seek examination at once.

In the state of New York 8,000 people died of cancer of the bowel and rectum in the past five years. Any one of middle age who suddenly notices a change in the character of the bowel movements, whether it be constipation, diarrhea or abdominal cramps, should seek medical aid. The appearance of blood in the stool should not be ascribed to a simple ailment. Especially is this so when one realizes that 60 per cent of all of the cancers of the large bowel and rectum can be discovered by the use of a simple instrument the physician has at his command.

The vital importance of seeking physical examination for these complaints is apparent, and the inestimable value of a periodic examination may be plainly seen, when one considers that diagnosis of a serious disease might here be made even before the symptoms appear. By a conservative estimate, 2,000 people in this group might have been cured and many others had their lives prolonged with much less suffering, had they sought periodic examination.

Acute appendicitis caused the death of 10,000 people in New York State in the past five years. It is impossible to control part of this mortality; but at least 3,000 of the deaths might have been prevented. If you had been told at a periodic health examination that you had an irritable appendix, you would have been warned by your physician not to disregard attacks of stomachache, not to take a cathartic and not to seek medical attention at the drug store. Only your physician will be able to decide whether you may have an attack of acute appendicitis requiring an early operation to save your life. If his plan is carried out, it will prevent extra days of hospitalization and the other, more serious, consequences resulting from delayed intervention.

The tongue today still is a mirror reflecting the presence of disease, notably certain types of

At a periodic examination when one is well, any slight defect will be noted and checked before it grows to the proportion where extensive care is needed to correct it.

U. S. Public Health Service

anemias. At a health examination the appearance of the tongue may lead to the discovery of pernicious anemia. Previous to 1926 this was considered a fatal disease; today the death rate is less than one half of what it was ten years ago. This is due to the remarkable discovery of the efficacy of liver or liver extract. Such a result shows the advisability of a periodic health examination.

The desire of some individuals, especially women, in deference to fashion, physical activities and greater comfort, to weigh a certain amount is commendable but should not be carried to extremes. But men have been notoriously negligent in controlling their weight. That obesity is a forerunner of diabetes is an accepted fact today. The penalty of obesity appears to be diabetes, as its frequency increases with the degree of overweight. Especially is this true where there has been a history of diabetes in other members of a family. The tendency to diabetes is hereditary, so the diabetic family should receive special attention.

In the state of New York in the past five years, 21,000 people died of diabetes. At a periodic examination the physician would discover the presence of overweight or a trace of sugar in the urine. Whereas in 1900, diabetes occupied twenty-seventh place as a cause of death, today it is the ninth. The control of weight may prevent diabetes. Its early discovery will certainly increase the duration of life. In the last thirty years the length of life of the diabetic has been doubled, and children have almost ceased to die of it.

Diets for both the overweight and underweight individuals should be arranged by their physician, who knows it is also unwise for youth to be underfed; it increases the liability to tuberculosis. The rapid loss of weight may lower resistance to infectious diseases, so an adequate diet containing proper amounts of necessary food elements is imperative.

It must be made clear that there is no more valuable data about yourself than that which your family physician accumulates year after year at health examinations. Slight alterations in the tissues and early manifestations of disease may be discovered by carefully comparing the findings of one examination with another. Periodic examination may reveal to you the presence of an irritable appendix, stones in the gallbladder or an ulcer in the stomach. Once you know you have these conditions, treatment can be gotten under way; moreover, if you should be seized with sudden, terrific pain somewhere in the abdomen you would know enough to seek medical care immediately, in order to avoid the serious consequences arising from delay.

From the diseases that I have mentioned—cancer, appendicitis, anemia and diabetes—43,000 persons have died in the last five years in New York State. It is within the realms of possibility that of this number at least 12,000 could have been saved from death by a periodic health examination. Where early manifestations of these conditions could be recognized, emphasis then could be placed on correct methods of living, the reduction of obesity and the seriousness of acute attacks of abdominal pain.

The physician must commend the well person when he comes to him for examination and record carefully the findings for future comparison. As a class, physicians must set an example to the citizens at large by subjecting their families and themselves to semiannual physical examinations in order to establish the value of this type of preventive medicine.

It is important for the public to know that in their early stages most of these diseases can be recognized by the case history and regular and thorough physical examinations.

Today the medical profession realizes that many childhood diseases are now under control and that our present problem must center about the adult, encouraging periodic check-ups. Is semiannual consultation with your physician too great a premium to pay for many years of additional life, freedom from suffering and consequently short periods of hospitalization?

The great poet, Ovid, made a statement more than 1900 years ago, "Too late is the medicine prepared when the disease has gained strength by long delay," and yet after these 1900 years people still "long delay."

Parents in the Audience

She walks upon the platform with her class.
The while, we watching, search her out, eyes dim.
Was ever 21 so fair, so slim,
In cap and gown as our own precious lass?
How serious that rose lipped, piquant face!
With what abandon those bright tresses curl!
But yesterday she was a little girl;
Today, a college graduate! Thoughts race
Back down the swift years to the night
The angels left the heavenly gates ajar,
When, slipping through, she came to us. Delight
In her has been an always rising star.
(She sees us. Look! She smiles.) No parents were
More blessed. O Life, be kind, be kind to her.

By ETHEL ROMIG FULLER

MODERN NURSERY RHYMES

NOT-SO-SIMPLE SIMON

Simple Simon met a pieman
  Selling cakes and candy
From a basket, where the dust
  And flies could find them handy.

Said Simple Simon to the pieman:
  "I'll not buy your ware;
They should be wrapped air-tight and clean--
  Of dirt wise folks beware!"

By Margaretta Harmon

LITTLE MISS MUFFET

Little Miss Muffet sat on a tuffet,
And didn't choose to play;
The shoes she wore made her feet feel sore—
They pinched in the very worst way.

She'd picked the size to fit her eyes,
But not the feet she owned;
So while wise children romped about,
She sat and moaned and groaned.

CLAUDE LILLINGSTON *depicts the plague brought about by the most famous pump in history. Death came suddenly and swiftly, covering the whole community with its cloak of cholera*

Mysterious Epidemics in History: IV

WHAT was known about cholera in 1854 when the notorious Broad Street pump outbreak in London created widespread panic? Precious little. It was not till 1883 that Robert Koch discovered the vibrio, or disease-bearing germ, of cholera, and for many years after 1854 the very notion that infectious diseases were due to germs was alien to the medical profession. Without the science of bacteriology to discipline their thoughts, doctors and others gave full rein to their imaginations and indulged in speculations and fantasies whose flimsiness is now apparent to all. But in those days they passed as more or less good coin of the realm.

For several years before 1854, cholera had raged sporadically in England and various parts of the European continent. Though the true nature of the disease was obscure, shrewd observation of its behavior had even then yielded certain interesting facts which have stood the test of time. In the first place, it was noted that cholera followed trade routes at a comparatively slow speed. It never traveled faster than human beings could travel, and this observation suggested that it was transmitted in some way or other from one human being to another. It was also noted that when an island country such as England was attacked, the disease first appeared at a port. When a ship sailed from a healthy port, the crew never developed cholera till they had entered an infected port, and contact had been established between them and the shore. There were even in those days vague suspicions that cholera might be a water-borne disease, but the exact nature of the evil conveyed by water remained obscure.

At the time of the 1854 outbreak, London was supplied with water by public and private wells and by water companies which competed with each other in furnishing more or less filthy water drawn from the Thames at various levels. Many of the wells were what is technically known as shallow wells: They may have been well below sand and gravel, but they were superficial to any clay stratum. This meant that they were supplied by rain, surface water and, worst of all, by any leaking cesspool which happened to be near them. As Dr. H. H. Scott has pointed out in his book "Some Notable Epidemics," the cesspools of London were at one time so numerous that when Derby Court in Piccadilly was pulled down to make room for the Museum of Economic Geology, no fewer than thirty-two cesspools were discovered. The soil was indeed ripe in 1854 for the tragedy of the Broad Street pump.

This, perhaps the most notorious pump in history, was situated in the parish of St. James, Westminster. As was ascertained later, the well which fed it was 28 to 30 feet deep, and it passed like the other wells in the neighborhood through sand and gravel to the surface of the clay. The water it yielded was cold and sparkling, qualities which endeared it to its undiscriminating patrons. Had they lived in our days, the wiser among them would have known that the sparkling was due to the generation of carbonic acid gas, whose source in this case was the sewage which had filtered into the well. Such sparkling of drinking water may be recognized by the facts that soon after it is drawn it loses its freshness and becomes flat; a film develops on it, and an offensive odor arises after a couple of days. But, alas, all these elementary facts were unknown.

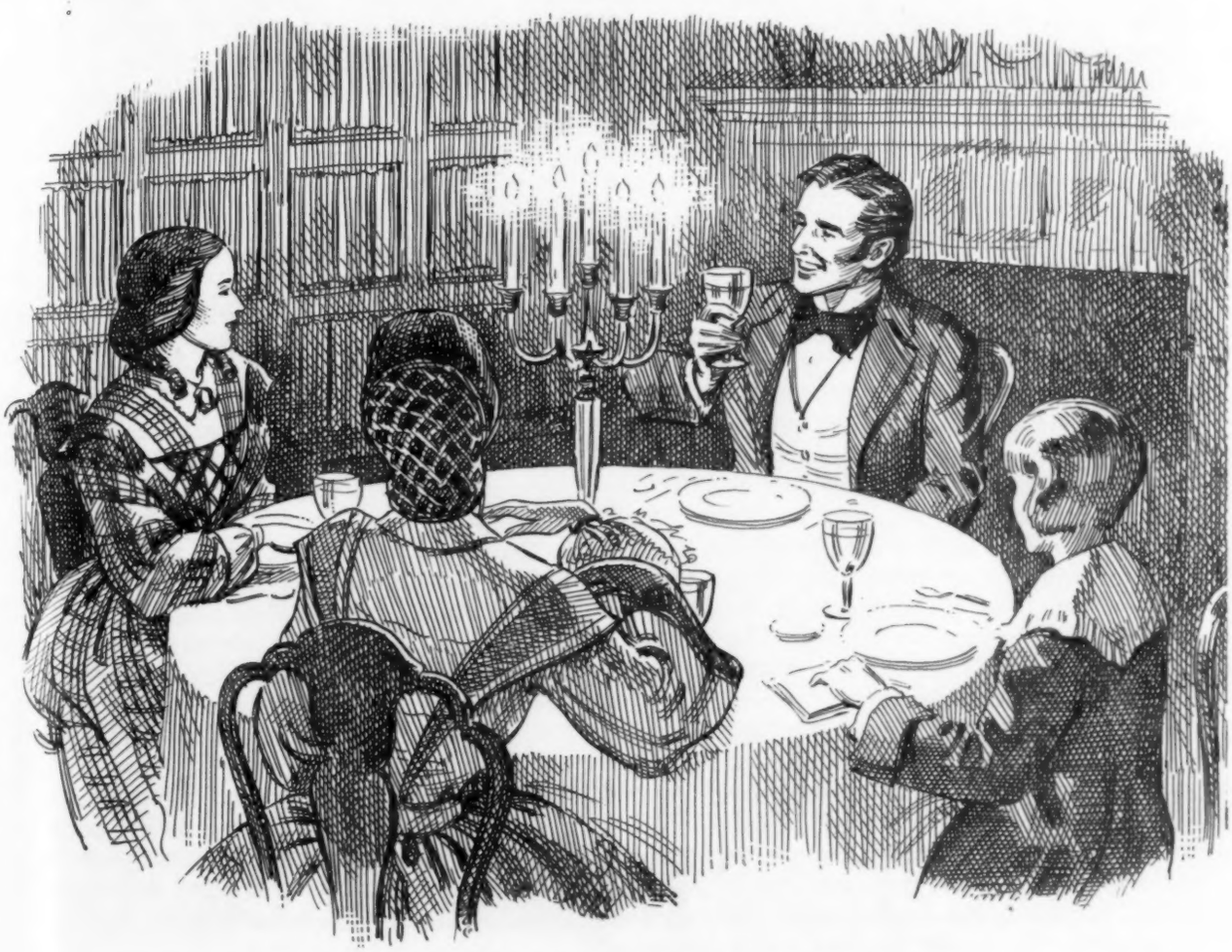
Though London had been sporadically afflicted by cholera for some years past, the Broad Street outbreak was so sudden and violent that it had the effect of a bolt from the blue. It fell on August 31, and in this small community of forty-nine houses, only twelve escaped one or more deaths. In all there must have been more than 700 deaths before the disease ran its course. But they were difficult to count, for the panic was so great that more than three fourths of the inhabitants of this

cholera area fled from it within six days of the beginning of the outbreak. Within ten days there were more than 500 fatal cases. In one house both parents and four children died. Though they scattered and fled, the inhabitants of Broad Street were literally more than decimated by their beloved pump.

Suspicion was soon to fall on it. As early as September 3, its water was examined and reported on. Small white flocculent particles were found in it, and if they were the characteristic "rice grains" of cholera stools, the degree of pollution must have been stupendous. However inconclusive the findings of the direct examination of the water might be, the circumstantial evidence incriminating it was so damning that the authorities cut off the water supply on September 7 by the simple device of removing the pump's handle.

What was this circumstantial evidence? It was, in large part, collected by a certain Dr. John Snow, whose gift of deductive reasoning on skilfully collected and sifted observations ranks him as a worthy precedessor of Sherlock Holmes. Here are some of the observations, which acted as so many clues all converging on the offending pump: In ten Broad Street houses which remained immune throughout the outbreak, there lived 97 persons, 87 of whom did not touch the pump's water, while the other 10 did not drink it at the height of the outbreak, or else they only partook of it in small quantities and with spirits. This was negative evidence, but it was remarkably instructive.

The positive evidence could not be gainsaid. Settled in Hampstead, several miles from Broad Street, there lived a widow who had not been near Broad Street for many months but who had taken such a fancy to its water that she had a bottle of it brought her daily by a carrier's cart. Drinking this water on the last day of August and the first day of September, she developed cholera, of which she died on September 2. Quick work. She was not the only victim, though hitherto there had not been any case of cholera in Hampstead. Her niece, who was visiting her at the time, drank some of the bottled water and promptly died of cholera. As there was no case of the disease in the neighborhood of the niece's home, the only clue



The water had many qualities that endeared it to its undiscriminating patrons.

to her illness was the deadly water so faithfully bottled in Broad Street and so carefully conveyed to the widow at Hampstead.

Another most instructive incident concerned two brothers, one of whom developed cholera in the neighborhood of the pump. Hearing of his illness, the other brother traveled all the way from Brighton to visit the patient. But before the brothers could meet, the patient succumbed, and when the traveler learned of his brother's death, he had not the heart to gaze on his dead body. Indeed, he stayed only twenty minutes under the same roof with him. But during those twenty minutes he partook of a hasty meal of steak and drank a tumbler of brandy diluted with water from the ill-famed pump. Next day he developed cholera, which ran such a rapidly fatal course that he was dead by the evening of the same day. Little wonder that cases such as these concentrated a lurid light on the offending pump.

The exploration and excavation of the ground in the vicinity of the pump and well connected with it revealed an almost incredibly insanitary state of affairs. Close to the well was a cesspool, which had been faultily constructed from the beginning and which had deteriorated greatly with the passage of time. The bricks lining this cesspool had rid themselves of much of the mortar uniting them and were so loose that they could be lifted out, one by one, with the greatest ease. The walls of the cesspool were indeed so uniformly permeable that they acted as a coarse sieve calculated to hold nothing back save comparatively gross impurities. The cesspool proved to be fully charged and overflowing, so even if germs of cholera had been intercepted by the walls of the cesspool, there was nothing to prevent their swimming over the top of it and passing on through the soil to the sparkling well water.

This cesspool was not, however, the only culprit. The main drain of one of the Broad Street houses proved to be flat bottomed and to have such an inadequate drop that there was no proper flow. The sluggishness of the flow was in large part responsible for a two inch deposit on the bottom of this drain, whose walls of brick and stone were anything but watertight, as the mortar joints had perished. So even if the cesspool into which this drain opened had been above sanitary reproach, the drain itself would have made sure that some of its fluid contents soaked through the neighboring soil into the well only a few feet away. Incredible as it may sound, the offensive cesspool had been opened seventeen years earlier because it was suspected of polluting the water yielded by the Broad Street pump. This suspicion had been confirmed at the time—and that was all!

In retrospect, and with all the essential data before us, the mystery of the Broad Street pump seems as plain as a pike staff. But at the time, the hero of this tragedy, Dr. Snow, had to grapple with and discard a huge mass of immaterial and conflicting evidence. He could not confound his critics and opponents as any doctor would today by brandishing a test tube in their faces or urging them to peer down a microscope and see the beasts for themselves. Instead, he had to rely on evidence, which was often so circumstantial that his contemporaries might well be forgiven if they did not always appreciate its value.

Like most pioneers of medicine, Dr. Snow had his deprecators, some of them in high places. Even so great a public health authority as Sir John Simon wrote many years after the Broad Street pump outbreak of "Snow's peculiar doctrine." Sir John was ready to concede a certain value to the provision of a pure water supply; but he was skeptical as to the problem of cholera being solved by so simple a device. Be it noted that at the time of Sir John's contemptuous reference to Dr. Snow's theories concerning the water-borne character of cholera, Robert Koch's discovery of the germ of cholera had not yet become an accepted fact.

In due course, however, Sir John Simon made his bow to Dr. Snow in a generous recantation. He said in so many words that the doctrine of the spread of enterozymotic, or infectious intestinal, diseases had grown up "among us in this country out of the very cogent facts which our cholera epidemics specially supply, and to which the late Dr. John Snow, 25 years ago, had the great merit of forcing medical attention: an attention at first quite incredulous, but which, at least for the last 15 years, as facts have accumulated, has gradually been changing into conviction."

The action which Dr. Snow recommended as the logical outcome of his "peculiar doctrine" was in almost every detail precisely that which is recommended today. He enjoined the strictest cleanliness and the frequent washing of hands by those in attendance on the sick. He also gave minute instructions with regard to soiled linen and the boiling of suspected water. He further pleaded for sanitary reforms with regard to water supplies, cesspools and drainage, which today seem ridiculously obvious but which in his day seemed the extravagant outcome of his "peculiar doctrine."

[NOTE.—Dr. Lillingston next month will recount the story of the outbreak of food poisoning at Welbeck, England, in 1880.]

*Reproduced from certified, unretouched photographs of identical foods, refrigerated, uncovered, at comparable temperatures.

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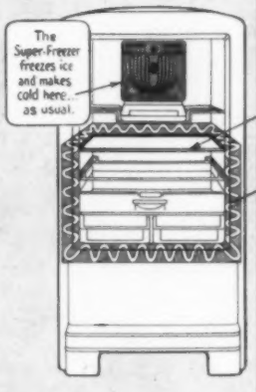

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VITAMINS IN FRUITS AND VEGETABLES
"A well-balanced diet, Mrs. Pierce, contains the elements needed for health."

Do you know your vitamins?

Even though your grocer does not label the various vitamins on the food he sells, you can be sure of getting most of them by remembering this simple rule—

Give your family a well-balanced diet including milk and other dairy products, vegetables and fruits, meats and cereals.

Some sources of VITAMINS

VITAMIN A promotes growth and health generally, and is essential to skin, hair, teeth, eyes and mucous membrane, such as the lining of the respiratory and digestive systems. Found in such foods as milk, butter, eggs, liver, green and yellow vegetables, and fish liver oils.

VITAMIN B (B1)—necessary for proper functioning of digestive and nervous systems and for growth. Essential to nursing mothers. Contained in foods such as whole grains, dried peas and beans, milk, eggs, yeast, liver, kidney, leafy and other green vegetables.

VITAMIN C—essential to growth and to nursing mothers. Strengthens body tissues, especially blood vessels, teeth and bones. Present in such foods as fruits and raw vegetables, particularly citrus fruits and tomatoes.

VITAMIN D enables the body to build and repair bones and teeth; prevents rickets. Developed in the body by exposure to sunlight. Fish liver oils, salmon, egg yolk, butter, and milk enriched with Vitamin D are among the food sources.

VITAMIN G (B2)—essential to health at all ages and helpful in promoting the growth of children. A liberal supply of Vitamin G is found in foods such as milk, meats (liver, kidney, heart, lean beef, pork and lamb), leafy vegetables, fish, peas, beans, peanuts, soy beans, eggs, wheat germ, yeast, and whole grains. Nicotinic acid, a substance closely associated with Vitamin G in many foods, prevents and cures pellagra.

Milk in all its forms, vegetables and fruits are called "Protective Foods," necessary to maintain health and build resistance to disease. Because they are rich in important vitamins and mineral salts every meal should include them. More "Protective Foods" in your refrigerator may mean fewer additions to your medicine cabinet.

A day's meals for a healthy person should also include protein to build sturdy muscles—meat, fish and poultry in particular; and for energy, moderate servings of carbohydrates and fats—sugar, bread, cereals and sweet foods, butter and other fats. Every child should have a quart of milk a day, every adult a pint—as a beverage or in cooking. Regular eating habits are especially important for growing children.

The values of foods are described in the Metropolitan booklet "The Family Food Supply." It tells how to plan appetizing meals that will help keep your family healthy; what to buy and why; and how to save money on your food bills. A post card, or the coupon, will bring you a free copy.

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AN EXPLANATION

The following paragraphs recently appeared in *Hearing News*, relative to an excerpt from these publications.

"A misleading quotation has recently appeared, taken from an article which appeared in both *The Journal* of the American Medical Association and HYGEIA, on occupational deafness and the effect of loud, jarring noises on the organ of hearing. The quotation, which follows, demands an explanation:

> " 'Although bone conduction seems to be the active cause of ear degeneration, air conduction likewise has been found to be responsible for deafness and deterioration of the auditory apparatus.'

"The quotation refers to experiments on animals which were subjected to loud, high-pitched sound vibrations over a long period of time. Some of the animals were kept in a cage on the floor, while others were in a cage suspended from the ceiling. Much greater damage occurred in the ears of the animals on the floor, where the noise vibrations were transmitted through the floor of the cage. However, in other animals with one of the external ears plugged with cotton, the plugged ears escaped damage.

"The explanation of these findings is simple. Exposure to loud, jarring, high-pitched noises over a long period of time will cause degeneration of the organ of hearing. The degeneration will be much greater when the noises are transmitted by air and bone conduction combined than by either air or bone conduction alone. A typical example in industry is the so-called 'boiler maker's deafness.'

"The purpose of these comments is to allay any fears among our readers that the use of either air or bone conduction hearing aids may have a deleterious effect on the wearer's ears. Needless to say, no one would wear a hearing aid in a boiler factory."

A wound is no sooner made than the healing process is set on foot.

—Dr. Oliver Wendell Holmes.

Great courage sometimes is required merely to do nothing.

—Sir William Osler.

Ewing Galloway

No fear and trembling need characterize any child's bedtime hours. How to cope with this and other cases of fright are described by

WILLIAM I. FISHBEIN

FEAR is important not only from the standpoint of self preservation, but it also stimulates children to unusual activities and increases their powers in many directions. It is, therefore, an emotion which should not be completely suppressed—but rather controlled.

For the parents to shirk punishment of the child because they feel that it may engender fear is not wholly reasonable. Fear of punishment, rightly employed, is an important means of controlling child behavior. Punishment, however, should be reasonably meted out and advance warning given of its use for forbidden actions.

Fear may begin in infancy because of associations with falling or loud noises, the natural causes of fear. For example, when a child has some strange object in his hands and hears a loud noise, he is frightened. Immediately he associates the noise with the object he holds in his hands. From then on, he fears this object.

Children sleeping soundly may be awakened by a peal of thunder. Suddenly awakening in the darkness, they develop fear of the dark. A child falls while in the bathtub, and fear of the water is the result.

Fears of this type are legitimate. Fears of dark, strange places, loud noises, high places, lightning, doctors and policemen get started in some children easily and in others with difficulty, depending on how the children are handled at home.

Mothers who faint and scream, who draw back in alarm, who control their emotions poorly will have children who are fearful of many things. How often parents threaten a child with a visit to the doctor or the police station to control him! This leads to the development of many unnecessary fears.

The cause for these fears may be easily traced. Others more vague and more difficult to trace are fears of dying, fear of the father's or mother's death, fear of being buried alive. These may be expressed by the child's refusal to leave his parents' side, by tearfulness and by the development of poor appetite.

In attempting to determine the specific cause for fears the inquirer must steer a course between oversolicitude and making light of the

fears. In the first instance, the child may get the idea that he is different from other children. In the second, he may be ashamed even to mention his fears.

For curing fears, the process of conditioning has been suggested. If fear of the dark has developed, when the child is put to bed at night the door of his room may be left partly open and a dim light kept burning in the hall. Then each night gradually close the door, and dim the light a little more. If this plan is patiently followed, within a week or two the child will probably go to bed wth the light out and the door closed.

By whipping or scolding, it may be possible to get the child to go to bed in the dark in spite of his fear. But he will lie in bed trembling with fright, which usually is injurious.

Fear of strangers may develop because an infant is suddenly taken into a room full of noisy persons, or because he is quickly jerked from the security of his mother's arms by some strange person. This shyness may be prevented by thoughtfulness in handling the child and cured by the same process of conditioning described just previously. The child is gradually brought closer, day by day, to the object he fears, until he finds by actual contact that it will not harm him.

Fear of the bath may be overcome in some instances by placing some toy the child likes in a small tub filled with water and allowing the child to sit by the tub and play with the toy. In the meantime he may be sponged off. Each day the sponging may be done with a little more water. Finally, the child may be induced to stand in the tub with a little water in it and finally to resume his bathing in the usual fashion.

The greatest patience is required in overcoming fear. Attempts should be made in the case of older children to determine the cause for the fear and to remove it. This may entail explaining the cause of the fear to the child. If the cause cannot be elicited certain fears may be eliminated by the process of reconditioning.

[NOTE.—Dr. Fishbein will discuss "Nervous Habits in Infants" in the next issue.]

QUESTIONS FROM MOTHERS

Thumb Sucking

To the Editor:—Will continuous thumb sucking change the contour of the mouth?

T. H., Texas

Answer.—Thumb sucking may seriously change the shape of mouth and the ability to close the teeth properly, so that a bad chewing surface results. Besides that, it is not a good habit and should not be allowed to develop.

Training Your Child to Play Alone

To the Editor:—How can I train my baby to play happily alone? He is 9½ months old. Like many a mother, I handled the baby too much and spent too much time with him, so that he now refuses to play by himself if alone and cries until I return for him. Shall I put him in his play pen on the porch and let him cry for hours, taking him up only when necessary, or shall I try some more gradual method? He will play happily if some one is in the room with him.

E. K., District of Columbia.

Answer.—You can probably train your baby to play alone if you are patient, gradual and reasonable in your procedures. You do not want to spoil your baby, but it is quite natural and even desirable for him to want somebody around. By no means put him in his play pen on the porch and permit him to cry it out for hours or even for a bitter half hour. Be near enough so that he can see you in the beginning. It won't harm him or you to pay him a reassuring visit so that he can feel your presence for a moment. You don't need to fondle him on these brief visits. Then by gradual stages he will learn to be content if he catches occasional glimpses of you. In time he may be able to play by himself for lengthening periods. Do not make too much of a problem of this, and don't be disciplinary. You can be sympathetic and reasonable without spoiling your child.

Immunization Against Diseases

To the Editor:—At what age should the baby be vaccinated for smallpox, diphtheria, whooping cough and scarlet fever?

T. G. B., Nevada.

Answer.—An infant should be vaccinated against smallpox by the age of 12 months and again at the age of 5, which is usually just before he enters school. He may be immunized against diphtheria at 8 months, and for protection against whooping cough and scarlet fever, each parent should let his personal physician decide as to advisability and need.

"HAIR BRAINED" NOTIONS

(Continued from page 492)

the mother who is not subject to it herself. Time, and intensive research now in progress, should some day reveal its cause, probably deep in the obscure chemistry of the glands. But for the present the statement of Dr. R. Sabouraud, recognized as the world's greatest authority on baldness, must stand: "We are increasingly ignorant of what the cause of baldness really is."

However, dermatologists reiterate that there are *contributing* causes of baldness, which are up to us to remedy or avoid, and that of these the most common are dandruff, wetting the hair, indiscriminate use of drugs and tonics and failure to keep the scalp clean. Mysteries remain to be plumbed; yet enough is known about human hair for dermatologists to say that if people only paid more attention to the fundamentals of scalp hygiene and less to popular superstitions, "remedies" and tonics, they would keep their hair longer; and if they would teach their children, along with other principles of hygiene, truth about hair instead of fiction, the coming generation would be less hairless and more attractive than our own.

One prominent doctor was considered highly cynical when, asked how to prevent baldness, he replied: "Pick the proper ancestors!" Short of picking well-thatched ancestors, the safest advice for the layman is "Take care of your hair while you have it—and forget about it when it's gone."

DANGEROUS TICK

A fatal case of Rocky Mountain spotted fever, in which a woman was apparently infected by picking a tick off her husband, is reported in a recent issue of *The Journal* of the American Medical Association by E. Herbert Bauersfeld, M.D., Washington, D. C. Her husband remained in good health. Dr. Bauersfeld says he does not know whether she mashed the tick in her fingers. "R. E. Dyer, M.D., has traced the source of infection in several cases to mashing ticks between the fingers after removing them from dogs," the author says.

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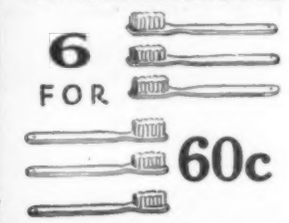

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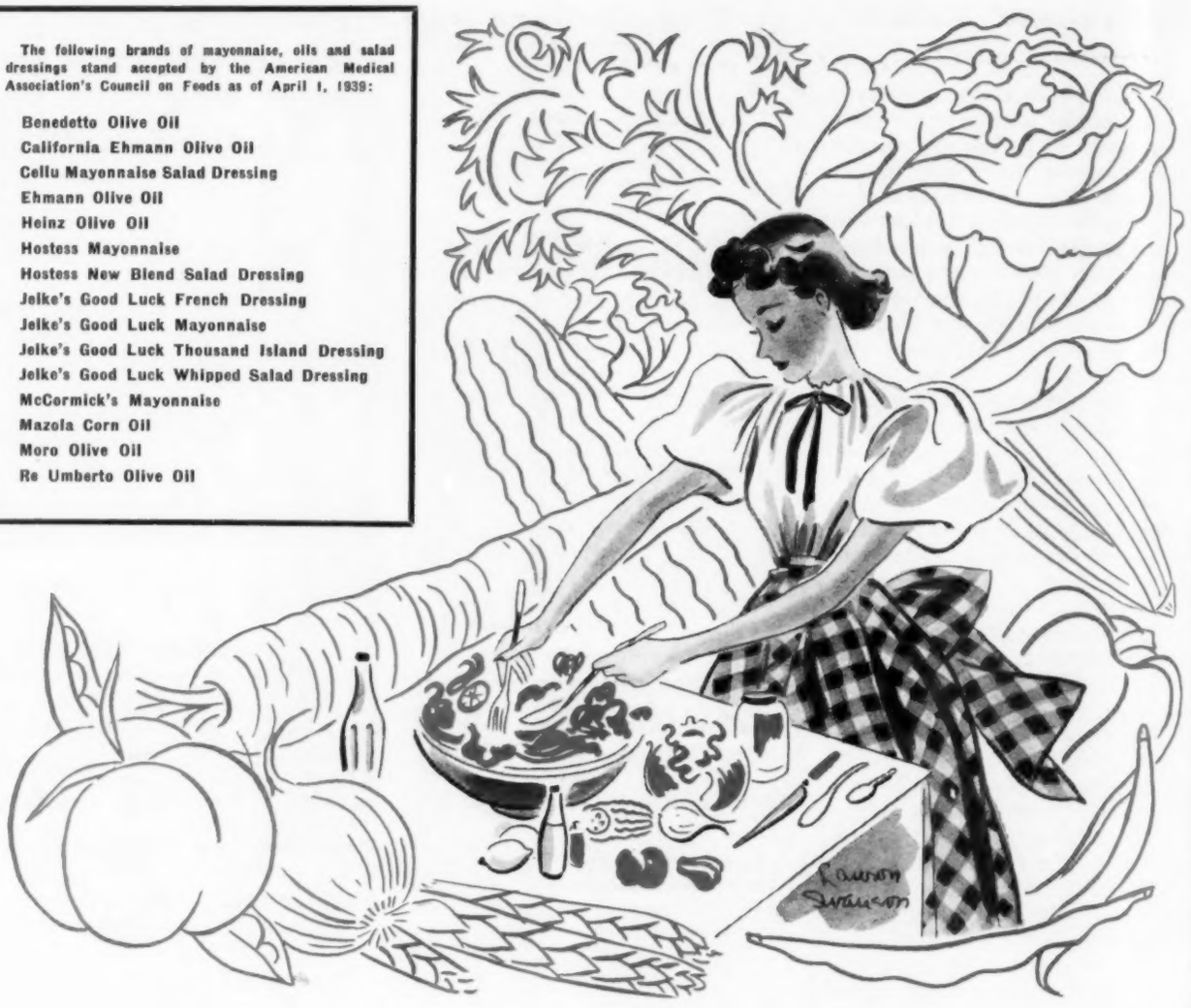
The following brands of mayonnaise, oils and salad dressings stand accepted by the American Medical Association's Council on Foods as of April 1, 1939:

Benedetto Olive Oil
California Ehmann Olive Oil
Cellu Mayonnaise Salad Dressing
Ehmann Olive Oil
Heinz Olive Oil
Hostess Mayonnaise
Hostess New Blend Salad Dressing
Jelke's Good Luck French Dressing
Jelke's Good Luck Mayonnaise
Jelke's Good Luck Thousand Island Dressing
Jelke's Good Luck Whipped Salad Dressing
McCormick's Mayonnaise
Mazola Corn Oil
Moro Olive Oil
Re Umberto Olive Oil



Mayonnaise, Oils and Salad Dressings

THIS is the season of the year when home gardens are yielding succulent green leaves of lettuce, tender new radishes, onions and cabbages. The abundance of these vegetables in home gardens and urban markets and their general use in salads bring to mind products useful in their preparation, such as mayonnaise, salad dressings and oils.

The Council on Foods has accepted a number of brands of mayonnaise and salad dressings. These products differ from each other not only in consistency and flavor but also in ingredients and caloric value. According to federal regulations, a product labeled "mayonnaise" must have edible vegetable oil and egg yolk or whole egg in it. The amount of egg is not specified, but at least 50 per cent of the finished product must be oil. Other flavorings may be added or not, as the manufacturers choose. Such substances as vinegar, lemon juice, salt, spice, sugar or dextrose usually are included. While the minimum oil content of mayonnaise is set at 50 per cent, there is no rule against adding more oil than that to the product. The oil content of brands of mayonnaise that stand accepted by the Council on Foods of the American Medical Association ranges from 65 to 84 per cent.

The kind of oil that goes into mayonnaise is the manufacturers' choice. One accepted brand of mayonnaise contains corn oil, another soybean oil, and two accepted brands contain cottonseed oil. The only federal regulation regarding this point is that it must be an edible vegetable oil.

Salad dressings differ from mayonnaise in several respects. There are no federal regulations or definitions for salad dressings, primarily because officials of the Food and Drugs Act hold that salad dressing is a generic term, which refers to any kind of a dressing that might reasonably be put on a salad. In general, salad dressings may be expected to contain less oil and more carbohydrate (sugar, starch, flour and so forth) and water than mayonnaise. The oil content of salad dressings that stand accepted by the Council on Foods ranges from 35 to 43 per cent. Because salad dressings contain less oil, they yield fewer calories.

AVERAGE PERCENTAGE COMPOSITION AND CALORIC VALUE

KIND OF DRESSING	MOISTURE	FAT	PROTEIN	CARBOHYDRATE	ASH	CALORIES PER TABLESPOONFUL
Mayonnaise	16%	78%	2%	3%	1%	102
Salad Dressing	41	39	1	16	3	62
French Dressing	39	40	1	16	4	57
Thousand Island Dressing	37	42	1	12	5	62

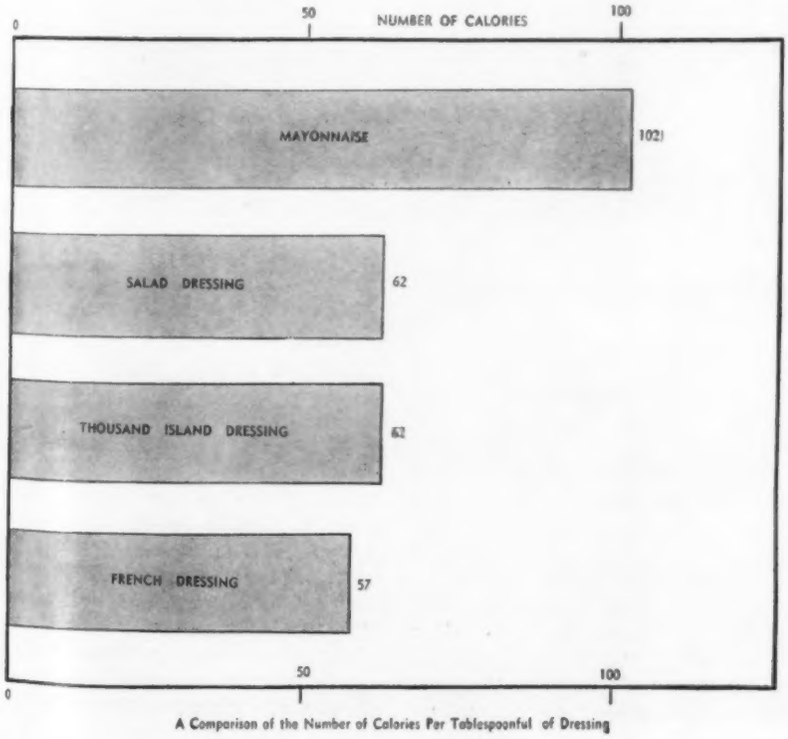
Commercial products are available in containers of several sizes: 3 fluidounces, 4 fluidounces, half pint, pint, quart and gallon. Approximately 86 per cent of all manufactured dressing is sold in quart, pint and half pint sizes. The 1937 production of salad dressings, mayonnaise and French dressing amounted to 34 million gallons, two thirds of which was salad dressing.

Accepted corn, cottonseed and olive oils are useful as food fats and in common with other fats are high in calories. However, they contain no fat soluble vitamins, such as vitamins A and D. One tablespoonful of each kind of oil furnishes about 100 calories. A French dressing prepared at home with either of these oils and suitable seasonings would yield about 66 calories to each tablespoonful.

Corn oil is prepared commercially from hot, dry germ, which has been segregated from the treated corn kernel. The pressed oil is refined and clarified. Cottonseed oil is obtained from cottonseed, soybean oil from soyas and olive oil from olives, as the names would imply.

The European olive oil is extracted by cold pressing, and only the oil from the first pressing is used for the brands of olive oil which stand accepted. This is filtered and blended with one or more varieties of olive oil. The California olives are ground and pressed in hydraulic presses without crushing the seeds. The oil is allowed to settle, is filtered and aged for about six months.

Olive oil may sometimes be adulterated with cheaper oils, although the government authorities are most vigilant to prevent such fraudulent practices. The Council also requires that firms furnish suitable evidence that no adulterant oils are present in any product under consideration before acceptance is granted.



A Comparison of the Number of Calories Per Tablespoonful of Dressing

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Always drink Kemp's Sun-Rayed—the pure, undiluted juice of WHOLE tomatoes. Delicious. The Sun-Rayed Co., Frankfort, Indiana.

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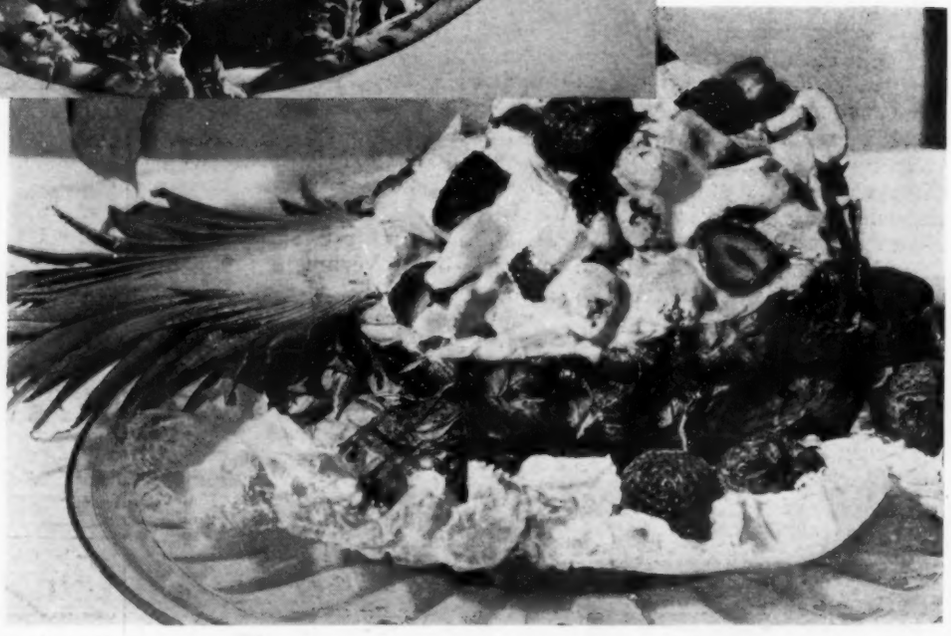
STAR SALAD

Remove any bruised leaves and core from head lettuce. Place it stem end down, in center of salad bowl; then cut into five equal sections. Let sections fall apart in star pattern. Place curly endive between cuts of lettuce. Arrange wedges of tomato, radish curls and green pepper rings on endive between pieces of lettuce.



PINEAPPLE BOAT

Take a ripe pineapple, and cut it in half. Scoop out center, and dice the fresh pineapple. Wash and halve some strawberries. Add small amount of sugar to berries and pineapple; mix together and add lemon cream mayonnaise; fill pineapple shell, and serve on a lettuce leaf.

SALADS: An American Institution

By HARRIET MORGAN FYLER

ARNOLD SHIRCLIFFE, who has written a comprehensive book on salads, besides inventing many varieties, says: "American women have made the salad an American institution. Their luncheons, especially, have been built around the salad."

American salads represent us abroad as our most notable national dish. A foreign compilation of international cookery gives salads first place in the American cuisine. However, our reputation for salads is newly earned. When "The Virginia Housewife" was published in 1831 it contained the recipe for only one salad. One standard cookery guide, reissued each year for fifty years, which devoted five and a half pages to salads and salad dressings in an early edition, now gives them forty-two pages.

The typical American salad consists of a variety of fancy mixtures: diced apples, celery and walnut meats in Waldorf salad; halved pears or peaches stuffed with cream cheese or cottage cheese; scooped tomatoes served with assorted fillings under many names; shredded cabbage or grated carrots with diced apple or pineapple. The pictorial effects of the "fancy" salad also originated in America. The cucumber boat pleasantly freighted with grapes, pineapple, bananas and marshmallows for a bon voyage party; the candlestick salad, consisting of a banana tipped with a red cherry anchored in the hole of a slice of pineapple, the salad but-

terfly with large wings of sliced pineapple (half a slice for each wing) brightly colored with tinted sugar and a slender body of pimiento are typical of the salad combinations American women have conceived.

It seems that European chefs bow to such pictorial effects, as well as to the novelty of ingredients. With a prodigal hand we mix bananas, grapes, pineapple, citrus fruits, cream cheese, nuts and strips of marshmallow and cherries and festoons of watercress. On hearing this list, a man adds to it, dryly, "And I suppose a sprig of poison ivy?" Few men are reconciled to the fancy salad. And there are no poets who sing, except in despair, of the fruit salad with dabs of cream cheese smothered with whipped cream or of the vegetable salad with strips of green pepper and pimiento submerging the honest lettuce leaf below.

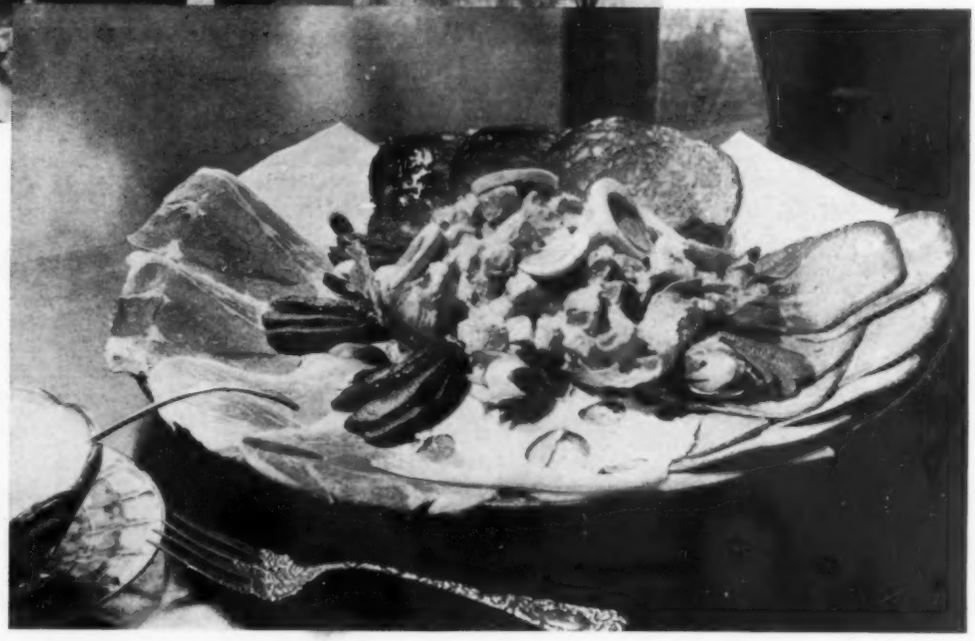
While the fancy American salad goes abroad, the simple green salad of Europe has been widely adopted in this country. Lettuce, dandelion, tender new radishes, onions and watercress of early summer; romaine, endive, escarole and cabbage of late summer and winter provide an abundance of greens from which to choose. To these greens may be added tomato, cucumber, celery, carrots, beans, peas, celery root together with onions and herbs in season.

The green salad calls for a French dressing. A basic recipe follows Sydney Smith's rhymed dictum: "Three times the spoon with oil of Lucca crown, and once with vinegar procured from town." Proportions may be four to one, and lemon juice may be used instead of vinegar. Salt and pepper are basic seasonings; additions of mustard, sugar, paprika, crumbled cheese, chopped chives, chopped parsley, garlic and onion, or both, are matters of taste. Grated yolks of hard-cooked eggs also are common ingredients.

The European style is to mix the salad in a big wooden bowl at the table. If this is done, the greens should be washed well in running water, shaken as dry as possible in a colander, then dumped in the middle of a tea towel, the four corners of which are gathered together and whirled at arms' length to get rid of any remaining water.

TOMATO PINWHEEL

Peel, then chill six tomatoes. Chill two cucumbers. Make four to six cuts in each tomato from top almost to bottom, being careful not to sever sections. Pare cucumbers; score lengthwise with prongs of fork to make fluted edge; then slice. Insert a slice in each section of tomato, and top with some sandwich spread.



FOR MIDNIGHT FORAGERS

The perennial favorite—potato salad—can be made with boiled potato and eggs, green onion, celery, pimiento and green pepper, all moistened with mayonnaise. Arrange the serving on lettuce, and surround it with cold meats, cheese and radishes.

The greens are then placed in a bowl much too big for them and brought to the table. There are few things in this sad world so provocative of profanity, so ruinous of tempers and tablecloths, as mixing a salad in a bowl that is just big enough!

To perform the ritual of mixing the salad at the table, a flask of oil together with a seasoning mixture are required in addition to the bowl of greens. The seasoning mixture has been previously prepared by taking a dozen sprigs of parsley and a morsel of tender young onion about as big as a one story peanut and hashing these together fine, almost to a paste. Dump this mixture into a small bowl. Add a generous pinch of salt, a good shake of pepper and half a teaspoonful of dry mustard. Now add enough good cider vinegar to fill a tablespoon, and with a fork mix the spices, vinegar and finely chopped parsley and onion well together. Sprinkle this mixture on the salad greens, and at once add 2 tablespoonfuls of the best salad oil that your purse can buy. Now mix the salad gently for a long time, until every leaf is smiling with the glistening dressing. Serve as many portions as there are mouths to feed.

Although many salads originated in America, their use in the diet and the belief in their benefits are old. Lettuce was known in the Egypt of the Pharaohs and in Persia of 500 B. C. Pliny states that a physician's prescription of lettuce saved the life of the Emperor Augustus. The Romans probably brought lettuce to northern Europe. An early English commentator says: "Lettuce is much used in Salats in the Summer tyme, with vinegar, oyle, and sugar, and salt, and is found to procure appetite for meats and to temper the heate of the stomach and liver."

The first use of the salad was as a refreshing accompaniment to the roast. Brillat-Savarin, that noted French connoisseur of food, wrote: "The salad belongs to the roast, and it should not be called upon to perform the service of a separate bridge between this and the sweets. The mission of the salad is to correct the too liberal ingestion of rich and fatty substances, to prepare for the dessert, to stimulate and divert the taste, and to promote stomach harmony at a time when the appetite has begun to flag and the palate is impatient of a long delay between the roast and the demi-tasse."

The removal of the salad from the main course of the meal to the first course is charged to Californians. It is alleged that a California dietitian initiated the fashion of starting a meal with the salad. If the salad is to be used as a first course, it is better to select a fresh fruit salad and serve it with a simple French dressing. Almost any mixture of fruits makes a good salad. Good summer combinations are: Cantaloup, berries and seedless grapes; melon balls, blueberries and peaches; pineapple, sweet cherries and honeydew melon; peaches, sour cherries and bananas; apricots, gooseberries and bananas; nectarines, orange and dewberries.

The salad may be also the main dish of a lunch or dinner. When the mercury starts climbing up and still up, meals planned around a main-course salad, supplemented with either a hot soup, hot beverage or hot dessert, will tempt the most wilted and worn-out member of the family. Mixtures of cooked (or canned) fish, fowl, meat and vegetables appear in main-course salads. Directions for making such salads are given at the end of this article.

Salads are held in high esteem by nutritionists as well as by those persons who live to eat. The shredded cabbage, grated raw carrot, greens, citrus fruits and other fruits, to mention just a few of the ingredients that go into a salad, are good food sources of the vitamins and minerals essential to health. The uncooked salad also provides some roughage (undigestible cellulose) which helps to keep elimination regular. At least one salad every day is a good rule to follow in planning meals for your family.

Jellied Tomato and Cream Cheese Loaf

2 cupfuls tomato juice
1½ tablespoonfuls prepared horse-radish
1½ tablespoonfuls vinegar
1 small onion, chopped fine
1 teaspoonful salt
Dash of cayenne
1 package strawberry flavored gelatin

Combine seasonings with tomato juice; heat to boiling. Pour over gelatin; stir until dissolved. Pour half of this mixture into a lightly oiled loaf pan. Chill until set. Pour cheese mixture on top; chill until firm. Add remaining tomato mixture; chill until firm. Unmold and garnish. Four generous servings.

For cream cheese center: Blend 2 packages cream cheese with 1 cupful of milk, salt, cayenne, grated onion and lemon rind. Add ½ tablespoonful gelatin softened in a little water and dissolved over boiling water.

Cherry Salad

2 cupfuls cherries
½ pound filbert nuts
6 marshmallows
¼ cupful fruit salad dressing
1 cupful whipping cream
2 medium oranges
1 head lettuce

Pit the cherries, and insert a filbert nut in the cavity of each. Arrange the stuffed cherries on crisp lettuce leaves with the cut marshmallows and sections of orange sliced thin. Whip the cream and fold into the salad dressing. Pile lightly on top of each salad. Serve with salted wafers or melba toast. Makes eight small servings.

Molded Crab Meat Salad

1½ cupfuls of flaked crab meat, canned or fresh
½ tablespoonful each of dry mustard and salt
2 tablespoonfuls sugar
2 whole eggs or yolks of 3 eggs
1 cupful sour cream
¼ cupful vinegar
1 tablespoonful gelatin
¼ cupful cold water

Dissolve gelatin in cold water. In a sauce pan or double boiler mix together the mustard, salt, sugar and unbeaten eggs or egg yolks. Stir until smooth. Add cream and vinegar, and cook until it is smooth and thickened and the custard coats the spoon. Add soaked gelatin and stir; when gelatin is dissolved, pour the custard over the crab meat. (Canned salmon, shrimp or chicken may be substituted.) Turn into a mold and chill. At serving time, unmold and garnish with lettuce and ripe tomatoes cut into eighths. Serve with the following sauce:

Cucumber Sauce

1½ cupfuls sour or sweet cream
½ teaspoonful salt
3 tablespoonfuls vinegar
1 cucumber, pared, chopped and chilled

Beat cream until stiff, and add seasonings, vinegar and chopped cucumber.

This molded crab meat is attractive when a ring mold is used. Serve on a round platter or plate, larger by several inches than the mold; around the edges put leaves of lettuce and tomatoes. In the center, pile the cucumber sauce. This is a cool, attractive dish to serve at a late evening supper or as the main dish for luncheon on a warm day.

FRUIT SALAD IN MELON BOWL

First prepare the salad dressing, as follows, and put to chill in the refrigerator:

2 tablespoonfuls (¼ cube) butter
Yolks of 2 eggs, beaten
1½ tablespoonfuls sugar
Juice 1 large lemon, strained
Pepper and salt to taste

Mix the first three ingredients in a double boiler and cook over hot water, stirring constantly, until sugar is dissolved. Reduce heat. Add the lemon juice and seasonings. Put back on stove, and cook until it is stiff; stir constantly. Cool and chill thoroughly. Just before serving, add a cupful of whipped cream and mix thoroughly.

Take the following fruits, and cut into not-too-small balls with a cutter made for that purpose:

1 cupful of the red center of watermelon
1 cupful cantaloup
1 cupful honeydew melon

To these add:

1 cupful fresh pineapple, diced
½ cupful fresh peaches, diced
½ cupful fresh pears, diced
1 cupful white grapes

Select a good sized, well shaped watermelon and cut lengthwise. Scoop out all the red part, and notch the edges of the rind, sawtooth fashion. Keep this and all the fruit cold until serving time; then place the melon shell on a platter decorated with flowers or greens, fill with the mixture, and serve. Have a bowl of crisp, ice-cold lettuce leaves brought in with the salad. The salad dressing may be passed, letting each guest help himself, or it may be poured over the mixed fruits just before the salad is brought to the table. Serves six or seven.

"YOU MEAN YOU NEVER YIELD TO TEMPTATION... AND SWILL A CUP OF COFFEE ON THE SLY?"
"THAT'S RIGHT... I HAVEN'T TOUCHED A DROP OF THE OLD BREW SINCE THE DOC SAID 'DRINK POSTUM INSTEAD!'"

AS A LOVER OF COFFEE you'd certainly hate to hear the doctor say—"No more coffee!"

Of course, this may never happen. You may never suffer ill effects from coffee. Many people don't. But, if you *do*, your doctor is most apt to advise that you drink "Postum instead."

Should this happen, you needn't worry about going without a good, warm drink at mealtimes. For a piping-hot cup of Postum has the tempting fragrance and delicious taste that will soon make you forget forbidden beverages.

Postum contains no caffein—no harmful stimulants. It is simply whole wheat and bran, roasted and slightly sweetened.

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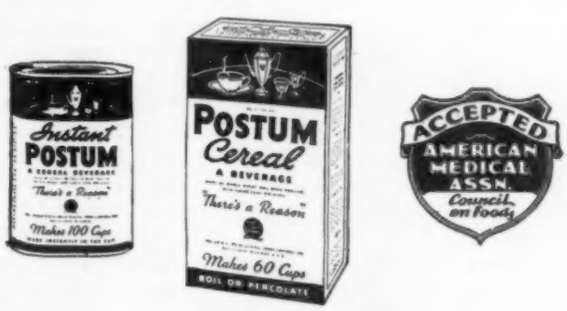
Postum comes in two forms: *Postum Cereal*, the kind you boil or percolate, and *Instant Postum*, made instantly in the cup. It's delicious and easy to make, either way. And economical (about ½¢ a cup). Postum is a product of General Foods.



ASK YOUR DOCTOR ABOUT POSTUM

THE MODERN AVIATOR (Continued from page 508)

night when their eyes are subjected to the glaring headlights of approaching cars. If the body is low in vitamin A, the regeneration of visual purple in such cases is so slow that it may invite accidents through faulty night vision.) Then all lights except a small one of low luminosity are extinguished. He is required to sit in the dark and watch for the "coming in" of the small dim light; but the test is not complete until he can distinguish the axis on which it is set. If the time he takes to identify and correctly tell the position of the test object is not greater than 3 minutes, he is considered free from any signs of night blindness. A stop watch is used in determining the elapsed time.

Another important step here is the determination of the pilot's depth perception, or stereoscopic vision, into which a "third dimension" factor enters. The ability of a pilot to perceive objects in relief and correctly estimate their relationship to and distance from one another is especially important when taking off or landing a plane and also plays no small role in other phases of flying. In this test, from a distance of 20 feet, he is required to aline side by side two small upright black rods, by manipulating the long cords attached to them; one of these is stationary and the other movable; they are located in a brightly illuminated box free of any shadows. The allowable margin of error when averaged in a series of five trials, is only 25 mm. If an examinee discloses defective depth perception in the "box and rod" test, he can also be tested, and generally convinced that he has such defect, by a check-up on an apparatus which at first glance reminds one of an old-time stereoscope.

Of course the usual eye examinations for nearsightedness, farsightedness and astigmatism are given in addition to those for color blindness, muscle imbalances and such defects as may be disclosed by an ophthalmoscopic survey. As regards visual acuity, most pilots' eyes are above average, many of them scoring a 20-15 rating, when 20-20 without glasses is considered normal. If his eyes are found to be even slightly abnormal, he is grounded until correction is made.

The booth housing the audiometer, or hearing test apparatus, is soundproof. Through the earpiece attached to the audiometer, the pilot is given a quick check on his ability to hear all sound frequency tones from 128 to 11,584, within a normal decibel range. (A decibel is a unit of the intensity and volume of sound.) If hearing is normal in every respect, this test does not take longer than a minute to perform. However, if the hearing is defective, additional tests by the use of a microphone and phonograph records, which permit the transmission of signals and tones similar to those heard aloft, are then conducted. In the phonograph test some static is injected, too, in order to make the test a little more difficult and to simulate the worst possible conditions aloft. In the early days of flying, a pilot had no means of communication while in flight. Nowadays he is in constant touch with the ground through a two way radiophone and in addition is guided along his course by the radio signals (the "beam") transmitted from the ground and heard through the medium of the receiving headset he habitually wears over his ears. Hence, good hearing in the air is as necessary as good vision.

Sinuses, nose, throat, mouth and ears are looked into. The chest is examined under the fluoroscope, and when necessary an x-ray film of the chest is taken for record purposes; an electrocardiogram is taken and results filed; a urinalysis is made; a blood count, hemoglobin estimation and Kahn test taken. As a matter of routine each examinee is typed for his blood category, informed on the findings and advised to carry in his billfold a notation about his blood type in case of necessity for transfusion in an emergency.

The lung capacity is tested by exhaling air into a spirometer after the deepest possible inspiration. The pilot is given a basal metabolism test when the necessity for it is indicated; but stewardesses routinely take it once a year.

Local doctors designated as "Medical Examiners UAL" look after the physical welfare of the employees of the United Air Lines at their eight "domiciliary stations" where pilots and plane crews make their homes. These are at Newark, N. J., Chicago, Denver, Cheyenne, Wyo., Salt Lake City, Seattle, Portland, Ore., Oakland, Calif., and Los Angeles. When anything special shows up, a report is dispatched by the local examiner to the Chicago medical center of the United Air Lines where it is decided whether to bring the person in for checking and observation or to direct appropriate remedial action at the home station. Col. A. D. Tuttle, M.D., is director of the medical center in Chicago.

Thus the pilots and stewardesses of the nation's airlines are constantly kept at top-notch physical condition; the other employees are watched over to make their individual parts of the whole an efficient operation of successful transportation.

DELAYED OPERATIONS CAUSE DEATH

Delayed operation, attributed largely to economic factors and use of home remedies, including laxatives, was responsible for an increased death date (9 to 23 per cent) in the acute suppurative (pus discharging) type of appendicitis among 1,000 adult cases of all types between 1931 and 1936 in Cleveland, as compared with the same number during the previous five years, F. R. Kelly, M.D., and R. M. Watkins, M.D., Cleveland, reported recently in *The Journal* of the American Medical Association.

The first thousand cases of the study occurred from about 1925 to 1930, when the nation was in a prosperous state economically, while the second series occurred during the depression years. Records show that patients in the second series delayed operation 29 per cent longer than the average delay in better times.

The use of home treatment, especially with laxatives, may be attributed partially to economic troubles. During the delay in reaching surgical aid the patient is using various medicines suggested by those about him; and among them, unfortunately, are laxatives. In the 1925-1930 series, 42 per cent of the patients reported having done so. Of the patients who died of what the authors term immediate causes, 67 per cent reported taking laxatives.

Complicating factors in diagnosis were also found to cause delay in operation.

HEALTHGRAMS

FROM ARTICLES IN THIS ISSUE

¶ According to a recent estimate of the potential life-saving power of serum treatment in lobar pneumonia, or pneumonia involving the lungs, the lives of 28,630 men, women and children could be saved out of the 63,000 deaths that annually occur without benefit of serum. *See page 509*

¶ An accepted estimate of the number of hairs on people's heads is 88,000 for redheads, 102,000 for brunettes and 104,000 for blondes. *See page 490*

¶ The tongue today still is a mirror reflecting the presence of disease, notably certain types of anemias. *See page 533*

¶ Health is not the end in life, but it is the means to the most desirable end, a prerequisite to realizing the greatest riches from living. *See page 524*

¶ Children wish to respect their parents but can do so only when their parents respect them. *See page 493*

¶ A bath may not necessarily increase your physical fitness, but it surely enhances your social fitness. *See page 527*

¶ Mothers who faint and scream, who draw back in alarm, who control their emotions poorly will have children who are fearful of many things. *See page 543*

¶ The sooner physical defects are detected the better for the ease and speed with which they can be cleared up. *See page 505*

¶ What a man eats determines to a great extent what kind of a man he is and will become. *See page 500*

¶ Making the vacation pay dividends in health, rest and recreation takes forethought, planning and preparation. *See page 574*

MARY: I've just got to tell you about our wonderful find, Jane—it's Post's 40% Bran Flakes, the most delicious cereal you could possibly have for breakfast!

JANE: It sounds simply grand, Mary—and the way you two talk, it must be something extra special!

JIM: You bet it is, Jane! Post's Bran Flakes not only taste great, they have *two extra benefits* that help to keep you feeling fit . . .

First, Post's Bran Flakes provide just enough bran, a *natural* regulator, that helps protect you against sluggishness. People whose systems are irregular, due to lack of bulk in the diet, find Post's Bran Flakes, eaten daily, a wonderful help. *Second,* Post's Bran Flakes are a good cereal source of phosphorus, iron, Vitamin B_1 to help maintain appetite . . . and today, Post's Bran Flakes come to you at a NEW LOW PRICE!

A FEW MONTHS LATER . . .

JANE: I'm so grateful to you for telling me about Post's Bran Flakes . . . they're perfectly delicious, and just what I needed to help keep my system in order!

MARY: Yes, isn't it wonderful, Jane, that eating a grand-tasting cereal every morning can give such wonderful *extra benefits!*

IMPORTANT: Post's Bran Flakes, due to their bulk, are a *regulative* cereal. Constipation due to insufficient bulk in the diet should yield to Post's Bran Flakes, eaten regularly—as a cereal or in muffins. For cases not corrected in this simple manner, a physician should be consulted. Post's Bran Flakes are a Post cereal—made by General Foods.

GETTING READY for MARRIED LIFE (Continued from page 520)

equipped to handle this, or indeed any other, medical problem.

You are thinking that your parents probably had no such advice prior to marriage. This was true of medical advice, but very likely their familes came from the same locality and knew generations of family history behind the stocks into which they were marrying. They did not marry a man, they married into a family. They had many wise and homely sayings to show that they took thought. One was an old Norwegian saying, "It is not good to marry a maid who is the only *good* maid in her family." Another, "It pays to be married and to marry into a large family," a wise conclusion for older generations. Again, they were accustomed to size up a girl's mother or a boy's father, estimating what the daughter or son would become at the same age. They were not deceived about the doubtful future of young people whose parents were living irregularly.

I have inquired among my middle-aged friends how many did seek premarital advice. I find many happily married ones who did not and who say that they preferred to learn together all that was necessary. Indeed that was probably the average attitude two decades ago. But I notice that those who found happiness without this advice are the partners in successful marriages of healthy, normal mates where no handicap existed. On the other hand, those younger couples who did go for consultation, some of whom were advised to postpone marriage until certain conditions had cleared up, are grateful for having had such advice. And by reason of unsuspected handicaps, some marriages have become failures; these couples wish they could have known in advance that such conditions were present.

So widely recognized is the wisdom of premarital examination that in ten states, of which Connecticut was the first in 1935, a premarital examination law is in effect. Eleven more states require affidavits that applicants are free from syphilis. Both parties should be given a physical examination and blood test. When examination reveals no evidence of disease, the blood test will detect a latent case.

When should this examination be made? At least a month, preferably two months before marriage, the engaged couple will do well to go together to a physician who will consult with each separately, then with both together. The reason for this elapsed time will be apparent if treatment is found necessary or if insuperable barriers are discovered. If the couple has any reasonable doubt about known factors of health or heredity, they should have advice before the engagement is announced. This type of examination should not be confused with routine examination for venereal diseases, for while this will be included, the examination will be much more comprehensive.

In this premarital examination your physician will ask about your family and your personal history and will make a physical examination. Let us explain each of these procedures in detail.

The family history of both has a direct bearing on their marriage. Is there in either family a likelihood of any physical disability, which may burden their own finances? Such diseases as arthritis, paralysis, epilepsy, heart disease, nervous or mental disease and tuberculosis, whether already present or likely to develop in parents or close relatives, may lead to dependence on the couple for financial support or indefinite nursing. In spite of these obstacles the couple may decide to marry, but they need to know the facts to plan finances intelligently. Eccentricities in their immediate families, the miser, the spendthrift or the chance rascal—these will not long remain in the background. Better laugh them off before marriage.

There is still another angle to the history of these and other diseases in the two families; may they appear in yourselves or your children through heredity? Is there a family tendency to insanity or feeblemindedness, for instance? Or does the nervous makeup of the stock lead to neuroses and psychoses or the abnormalities or perversions of sex?

Let us see how your marriage is affected by heredity. In the latter half of the last century, Gregor Mendel, an Augustinian monk, laid down fundamental laws of heredity, further augmented by later research. It enables us to determine what will result when individuals of known family tendencies marry. The reproductive cells contain specialized constituents of the nucleus, known as chromosomes. In these chromosomes are elements generally called genes. The fertilized ovum, of course, contains the genes or hereditary factors of each parent; but the prospect of the issue is not so simple as that statement implies. Individuals possess also hereditary factors dormant for several generations, therefore called recessive. When an individual with such a recessive tendency marries a mate without it, the tendency will not appear in the children but may appear in their children's children. In the marriage of two individuals having the same recessive tendency, though showing no evidence of its presence in themselves, some of their children will definitely exhibit characteristics of that tendency. This is true of certain malformations, temperaments and diseases.

Accidentally acquired conditions are, of course, not hereditary. Whereas a paralysis due to high blood pressure and brain hemorrhage has an element of heredity, a similar paralysis due to a brain hemorrhage resulting from an accidental fracture of the skull has absolutely no bearing on heredity. The same is true of paralysis due to infantile paralysis or that resulting from diphtheria. These conditions are acquired, not hereditary.

Before marriage it is well to know the possibility of transmitting defects or diseases to the offspring. In some forms of blindness, deafness, deaf-mutism, in harelip and in development of extra fingers and toes, there is a recessive hereditary influence. A father who had six webbed fingers and toes had four children, one with the same abnor-

(Continued on page 561)

QUESTIONS AND *Answers*

Removal of Scum from Soup Stock

To the Editor:—When making meat stew or soup stock, cook books usually instruct one to skim off the "scum" which rises to the top. I have always considered this unimportant and, being a self taught cook, reasoned that to throw away this flaky substance drawn from the meat and marrow bone would rob the stew of much of its food value. Is it good or bad for the health to eat this scum?

I. K., New York.

Answer.—The scum which forms on soup is albumin, a water-soluble protein similar to egg white, which is coagulated by heat and rises to the top as scum. Since this scum enhances the nutritive value of the soup, it hardly seems worth while to remove it, unless, of course, a clear soup is desired, in which case it can be skimmed.

Eyeglasses for Nearsightedness

To the Editor:—I have noticed that glasses to correct nearsightedness, when lenses are ground, are thick at the outer edges and thin in the center. Although I am not certain, I believe that they may be ground thin at the edges also. When you look at these glasses from an angle, it seems you see hundreds of layers of glasses in proximity to each other. This is especially true in glasses to correct advanced stages of myopia. When these glasses are put on the eyes, they make the eye look smaller, and the very thick lens makes the eye look so small as to distort the features of the face considerably. Glasses for the farsighted have none of the "layer-on-layer" effect of the nearsighted glass. Also they do not tend to make the eye look small; however, in advanced cases they make the eye appear larger. Is it not possible to grind a lens for myopic eyes that will appear more like plain glass and will not make eyes look smaller?

W. J. B., Illinois.

Answer.—A myopic, or nearsighted, eye is one which is long or oval as compared with the normal, nearly spherical eyeball; consequently images are not thrown on the retina, or "seeing membrane" lining the eyeball, but are thrown in front of it.

To correct this condition a concave or hollow ground lens is placed before the eye which causes light rays to separate or diverge to fall exactly on the retina. Naturally, the greater the myopia, the stronger the concave lens that is required to correct the vision. The edges of a concave or "hollow ground" lens are necessarily thick and the center portion is thin, and this becomes more noticeable with increasing lens strengths. This type of lens tends to reduce, or minify, the size of objects when held before them, just as the opposite type or convex lens produces magnification. Because of this minifying effect, the eye with a concave lens before it looks smaller to another observer. The concentric ring effect seen when viewing a concave lens from the side is due to the visibility of the fractional segments which form the complete lens. Only this type of lens shows this effect.

Recent progress has made possible a concave lens which does not have the distortion effect or the greatly thickened lens edge. Your eye physician can inform you where these lenses are obtainable.

The Stereo-Orthopter

To the Editor:—What is the opinion of oculists concerning the stereo-orthopter, a mirror reflecting instrument for treating strabismus, said to cure or benefit sufferers from hyperphoria?

R. P., Iowa.

Answer.—Many cases of lack of balance of ocular muscles with resultant hyperphoria (the condition in which one eye has a tendency to be higher than the other) are benefited by exercises. Such exercises have the aim of teaching the individual to use both eyes together at the same time. There can be no standard routine of exercises prescribed for any one indi-

Black Box

If I stopped smoking, would I become free from the annoying symptoms that arise from my allergy to tobacco?

vidual, as all cases differ from each other. The stereo-orthopter has a definite value when used intelligently under the supervision of an oculist. But seldom is one form of exercise, as provided by this or any other mechanical device, sufficient to remove the symptoms that may be caused by hyperphoria.

Keloids

To the Editor:—Is there a cure or a way to stop keloids? I have been told that only Negroes have them, but I am a white person and would like to know if I can get rid of them some way. I have had one cut out, but it has returned.

W. B., New York.

Answer.—Keloids are dense, fibrous growths just beneath the skin, usually in a scar and consist of one or more smooth, firm, reddish, scarlike tumors or masses. They grow progressively larger, seldom become smaller or disappear without treatment. They usually occur in Negroes but may occur in any race at times. The cause of keloids is unknown. The x-ray, radium or carbon dioxide snow have often proved successful in treatment.

Infection from Pulling Out Nasal Hairs

To the Editor:—Is there any danger of infection after pulling out hairs from the nostrils, if precaution is taken to use a good disinfectant after removing the hairs?

A. R., Montana.

Answer.—The usual story obtained from patients presenting furuncles in the nostrils is that the lesion developed after pulling a hair from the nostril. This shows the danger of such acts.

The use of a disinfectant is not advisable, since hair in the nostrils is rather deep rooted, and local applications of germicides do not penetrate the follicle to sufficient depth to have prophylactic value. It is likely that disease producing organisms are normally present in the nostril and that the injury induced by forcibly pulling the hair lowers the tissue resistance to infection, as well as rendering the follicle more susceptible to invasion by bacteria. Such hairs, if objectionable, can be permanently removed by electrolysis or else cut off with scissors where they emerge from the follicle.

Allergy to Tobacco

To the Editor:—When a person is allergic to tobacco, as shown by a decided skin test reaction, what effects does smoking produce? Does any permanent harm result? Would the discontinuance of smoking result in the complete disappearance of harmful effects?

C. R., Massachusetts.

Answer.—Though tobacco allergy is not a common cause of definite allergic manifestations, it can produce allergic reactions in various tissues in the body. Dermatitis or eczema may occur, especially on the face, not only from inhalation of smoke but by contact of the skin with smoke in the air from other cigarets. Stomach and bowel symptoms, including gas, pain and cramping, have been known to result. Allergic reactions, likewise, may occur in the eyes, nose and bronchial tract. Evidence exists that tobacco as well as much other allergy may primarily sensitize the cells of the blood vessels, affecting especially the small arteries and capillaries. The degree of such sensitization varies, being greatest in the vessels of those tissues or organs which become the seat of the patient's symptoms. Vascular allergy seems to be responsible for a disease called thrombo-angiitis obliterans, which causes serious lesions in the feet and legs, especially in heavy smokers. Of interest is the fact that the capillary microscope reveals contraction of these vessels in many individuals even when a slight amount of tobacco smoke is inhaled. Whether such contraction is due to allergy or to some toxic action is not certain.

Most individuals who are tobacco sensitive will react to its extract. Reactions may occur to one variety of tobacco and not to another. Reactions by the scratch method are less common than by the intradermal method. A large percentage of persons, especially smokers, give reactions to tobacco. At present, we feel that unless definite symptoms seem to arise from smoking, the presence of a positive skin reaction is not enough indication to discontinue smoking. If symptoms are actually present, according to a qualified medical opinion, smoking should be stopped. It is also possible to desensitize a patient to tobacco allergens, but the doses must be individualized.

The Abilities of a Germ

To the Editor:—How can germs eat? Can they see human beings?

R. Y., New York.

Answer.—Bacteria are microscopic single cells and do not possess organs of sight. This is true of all such forms of life. Bacteria feed by absorbing through their surface their own special type of food and fluids. They possess digesting juices that break up their food and thus furnish energy. Bacteria feed in a similar way to yeast cells and other single cell forms of life.

Tuberculosis

To the Editor:—I have had one lung collapsed by pneumothorax for fifteen months. I never had a cough but have continued to raise phlegm from my throat. I have been told that this will continue whether my lung is collapsed or not. I have had several sputum tests, and they have been negative for ten months. Is the infection active if the sputum test is negative?

B. K., Montana.

Answer.—Many patients with a pneumothorax, and even patients whose tuberculous processes have been arrested for some time, continue to raise small amounts of mucus. This is frequently more marked during damp weather and less during dry sunny days. The probable sources may be: (1) mucus discharged from the back part of the nose or throat, "postnasal drip," and (2) because lung tissue once destroyed by tuberculosis is replaced by scar tissue, it does not absorb the moisture of inhaled air as well as healthy lungs do. This moisture may be raised as mucus.

The fact that the sputum from a collapsed lung has been negative for ten months is suggestive but does not necessarily assure absence of activity. Activity in pulmonary tuberculosis is determined by pulse rate, temperature, presence of suggestive physical signs and by positive findings in laboratory tests, such as blood examinations.

Negative sputum examinations should be followed by examination of the stomach juice by smear and by the injection of the juice into guinea pigs. This is the most sensitive test for the presence of tubercle bacilli.

HOMOGENIZED MILK (Continued from page 499)

milk has a curd tension lower than that of the milk from which it was prepared, it does not necessarily have a soft curd. If the distributor makes soft curd claims for his homogenized milk, it is to be assumed that he has conformed to the conditions that produce this character of curd and that he tests the product from time to time to make certain that the product is as expected.

Soft curd milk has many advantages. Digestion of the curd begins where contact is made with digestive secretions. A soft curd is easily broken up to many minute particles, and digestion of small particles proceeds more rapidly than that of large pieces. Thus it is found that soft curd milk leaves the stomach more quickly, and the curd is disintegrated in the digestive tract more rapidly than in the case of hard curd milk. This is advantageous for several reasons, but it does not mean that soft curd milk is more completely digested or that it is more nutritious than hard curd milk. Persons beyond infancy are able to digest milk completely and to obtain its nutriment effectively whether the curd is hard or soft.

For the older child or adult the use of soft curd milk may be desirable, but it is not essential. For the young infant, some means of making the curd more easily broken into small particles is much more important. At the present time milk for the baby is usually boiled and frequently diluted with water as well. Both these procedures reduce curd tension. Boiling milk may be expected to reduce curd tension to one third or less of its original value. This procedure alone gives soft curd properties to almost all dairy milks. Boiling milk serves the double purpose of making the milk easier to digest and of protecting the baby from harmful bacteria that may have been in the original milk. Because of the effect that boiling has on the curd of milk, little if anything is accomplished by starting with homogenized or other variety of soft curd milk. However, homogenized milk does possess certain advantages in infant feeding. The cream does not rise, and the bottles do not require shaking in preparation for feeding. In these days of increasing popularity of vitamin D milk it is well to realize that the vitamin D is associated with the fat and is therefore uniformly distributed throughout the milk when it has been homogenized. The baby cannot be robbed of his quota of vitamin D by removal of cream for family use. When fortified milk is depended on for supplying vitamin D to the baby, the customary fish oil preparations may not be given. In these instances it is more important that the baby receive his share of the cream, because vitamin A as well as vitamin D is present exclusively in the fat, and milk would be the baby's chief source of vitamin A.

Obviously homogenization adds something to the cost of producing milk for distribution. Some dairies make no additional charge for this service, while others increase the price by 1 or 2 cents a quart.

Certain milk products other than plain milk are regularly homogenized. All evaporated milk is homogenized for the purpose of keeping the cream from separating while the cans are in storage. Evaporated milk has a curd tension about one tenth that of the milk from which it was prepared; this effect on the curd is due in a larger measure to the heat treatment of the product than it is to homogenization. Also, it is an almost universal practice to homogenize commercial ice cream mixes; processing in this manner makes the ice cream smoother in texture, more uniform in "body," richer in flavor and less likely to develop iciness.

In summary, it may be said that homogenized milk is advantageous in that an even distribution of the cream to all consumers is assured, as is also an even distribution of vitamin D if this has been added to the milk. The soft curd character that may be produced in milk by appropriate homogenization may be expected to lead to greater speed of digestion of milk and thereby possibly contribute to an earlier feeling of hunger and also possibly to a relief from a feeling of overfulness that some adults seem to have as a result of drinking milk. Whether certain other changes, such as increased richness of flavor, are to be attributed to homogenized milk, depends largely on individual preferences and acquired tastes.

"I only had time to read half of that book on 'how to develop.'"

BOOKS ON HEALTH

Season of Birth—Its Relation to Human Abilities

By Ellsworth Huntington. Price, $3.50. Pp. 473. New York: John Wiley & Sons, 1938.

THE author of this book is one of the most interesting of our American scholars. He is a specialist in geography, the author of a number of books on geography and a careful investigator. In his researches dealing with the influence of environment on human beings he found the effect of man's physical surroundings on health and mental development challenging. In this new field he has become an outstanding authority.

This new book marshals additional factual material to show the strategic importance of climate in the life of man. J. MACE ANDRESS.

The Five Sisters

By William E. Blatz, Ph.D. Cloth. Price, $2.50. Pp. 209. New York: William Morrow & Co., Inc., 1938.

THIS is a thoughtful, scientific, yet popular report of the efforts that have been made by the professor of child psychology of the University of Toronto to guide the training of the famous Dionne quintuplets during the preschool years. It is written primarily for parents and is more a "human" than scientific document, charming in its delineation of the sisters as individual personalities, strong in its emphasis of the sense of responsibility felt by those entrusted with the care of these children, who, in view of the worldwide interest, have become symbols of the universally deep-rooted primary interest in children. The dignity of childhood, the strong necessity to preserve for these five children the opportunity to grow into wholesome, normal women despite the inescapable and merciless publicity to which they are subjected, are emphasized by the author in his description of their practical management and guidance.

Dr. Blatz first discusses the physical arrangements for the care of the quintuplets. Two somewhat incompatible objectives had to be met. On the one hand, the excessively frail children, born approximately two months prematurely, required every possible resource to enable them to maintain life at all during the earliest months. The extraordinary public interest they excited made it necessary to provide physical arrangements such that they could be observed by the public with a minimum of disturbance.

Report is made of the "intellectual" development of each of the sisters, in which the conclusion drawn is that the children show the lag in development ordinarily observed among premature children, that the rate of development is such that there is every indication all of the children are potentially "normal," and that they may confidently be expected to attain fully adequate capacities in motor development, in language achievement and in those adaptive and personal-social responses by which one judges "normality." Parents will find the descriptions of the training routines and the management of the problems of conduct illuminating and helpful.

Dr. Blatz succeeds admirably in his effort to present a popular record of the preschool years of the world's most famous children. Physicians and educators will find it as satisfying reading as will parents. GEORGE MOHR, M.D.

Handsome Is as Handsome Does

By Hazel Rawson Cades. Price, $1.50. Pp. 100. Illustrated. New York: D. Appleton-Century Company, 1938.

"WITH intelligence, patience and good taste any child with an average physical endowment can be made what I call good looking." With this thought paramount the author proceeds to show how much can be done with the "ugly duckling." Her hints are graphic and understandable. They should produce the best possible results in making daughter attractive both now and later.

SIBYL WINSER JOHNSTON.

From Saturday Evening Post, Copyright Curtis Publishing Company, 1938

"No, no, Mrs. Smythe! It's your DENTIST twice a YEAR; clean your TEETH twice a DAY!"

The Purposes of Education in American Democracy

By Educational Policies Commission. Cloth. Pp. 157. Washington, D. C.: National Education Association of the United States, 1938.

AN American educational policy must be based on the maintenance of democracy in a changing society in which institutions are made for man. A democracy includes the rights of "free spech, unhampered access to the facts on important questions, the voting franchise, religious liberty, impartial justice, the equal protection of the laws, and . . . life, liberty, and the pursuit of happiness." The ideal is not *"identity of educational programs* but rather *equality of educational opportunity."* The objectives of education are set down as "self-realization," "human relationship," "economic efficiency" and "civic responsibility." In spite of a disavowal of that attitude, the author himself is inclined to be dogmatic and aphoristic. It is recognized that "the first requirement in the field of health is an inoculation against superstition, voodoo, witchcraft, and humbug in the fields of medicine and human biology," yet in the next paragraph most of the unestablished statistics in the National Health Survey of the Public Health Service are repeated. The work, as a whole, is an excellent statement of the attitudes of modern educators.

A. M. Simons.

Report of the Studies and Research Committee

Prepared by the American Camping Association. Paper. Pp. 30. Ann Arbor, Mich.: American Camping Association, 1938.

THIS mimeographed report is a comprehensive outline of the studies which are in progress, or projected, for the purpose of evaluating camping procedures, studying the educational, recreational, health and safety implications of camping and its relationship to community planning and for the purpose of developing training facilities for camp leaders. It is, in short, a prospectus of proposed research in organized camping and a preliminary step toward the formulation of codes of procedure and standards of equipment and personnel, with the ultimate hope and purpose of bringing order out of the diversity which now exists in the camping movement.

It indicates that there has already been excellent progress in the basic surveys and studies on which further studies are to be based. It should be of interest to all executives of organizations interested in camping as a part of their program for leisure time or health activities, as well as to camp directors and leaders. It is a condensed reference report which is not designed for casual reading but will repay close and careful study. It is preliminary in character, partaking more of the nature of a coordination of plans for future activities than a report of results achieved.

W. W. Bauer, M.D.

Medicine in Modern Society

By David Riesman. Cloth. Price, $2.50. Pp. 226. Princeton, N. J.: Princeton University Press, 1938.

THE aim of this book is to present clearly and briefly for the intelligent layman some of the outstanding historical events in the development of medicine and the part which medicine plays in society today. Dr. Riesman has had a distinguished career as a physician, medical investigator and medical historian. After reviewing briefly in separate chapters the early steps in medical progress, advances of the nineteenth century and in the twentieth century, Riesman considers such interesting problems as cancer, medical education and the neuroses. Superstitions and cults are especially well handled. Some of the most famous quackeries of all time are discussed entertainingly, including the results of widely held beliefs in astrology, the bezoar which was once considered a universal remedy, and the so-called "Sympathetic Powder" of Sir Kenelm Digby. This chapter, while obviously incomplete, serves to illustrate mankind's constant urge to believe in a sure cure, regardless of its scientific worth. In the chapters "Medicine as a Career" and "The Family Doctor" some of the advantages of medicine as a profession are presented with some of the personal recompenses which derive from this arduous life.

E. P. Jordan, M.D.

[Note.—Books reviewed or mentioned in this section, other than those published by the American Medical Association, should be ordered from booksellers or direct from the publishers. They may not be ordered through Hygeia or the American Medical Association. Publishers' addresses will be found at the end of the section.]

Safety First and Last

By Charles E. Dull. Price, $1.75. Pp. 241. Illustrated. New York: Henry Holt and Co., Inc., 1938.

WITH more than 10 million persons injured in accidents of all kinds in the United States in 1936, 110,000 accidental deaths in a single year and an economic loss estimated by the Metropolitan Life Insurance Company at $3,750,000 the problem of accidental injuries and deaths becomes one of our most serious problems. There are many ways of reducing this tremendous loss; but one way is to consider it from an educational point of view. It has been proved that education in safety is effective. To promote safety the author has prepared this practical textbook for high schools. Because of the many accidents in automobile traffic, the major part of the book is concerned with giving the reader an understanding of the way an automobile is made and just how it should be driven; but it also presents other safety facts on such topics as "Safety in the Home," "Safety on the Farm" and "Safety in School and at Play." There is an excellent glossary and an adequate bibliography. This text merits a wide use in high schools.

J. M. A.

How to Conquer Constipation

By J. F. Montague, M.D. Cloth. Price, $1.50. Pp. 244. Philadelphia: J. B. Lippincott Company, 1938.

SIMPLE language dominates this book in order that the average layman may easily understand its contents. The emphasis, of course, is placed on the necessity of consulting one's physician for an accurate diagnosis as to the cause of the constipation. Particular significance is given to the use of water on arising. In this chapter, the author discusses the undesirability of drinking water at meals. This, of course, is an old fallacious idea, and scientific evidence bears out the fact that water should be taken freely at meals and that digestion goes on much better in dilution than in concentration. The question of the action of cigaret smoking on the large bowel, as well as the gastrointestinal tract, is controversial. The reference to halitosis and constipation is based on sound medical knowledge.

Sidney A. Portis, M.D.

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How to Enjoy Ill Health

By Cecilia L. Schulz. Cloth. Price, $1.75. Pp. 194. New York: McGraw-Hill Book Company, 1939.

THE author, who was once a nurse, has adopted a lightly satirical style in offering advice to prospective patients. She is inclined to believe that the hospital is the best place for those who are sick; but even in the home it is possible to enjoy ill health. Her book is full of excellent advice presented in such sugar-coating that it is easy to take. Her understanding of human nature is the factor that makes the book worth while. The book will be an excellent one for those who are sick and even for those who expect to be sick.

MORRIS FISHBEIN, M.D.

Taber's Medical Dictionary

By Clarence Wilbur Taber and Associates. Second Edition. Cloth. Price, $3. Pp. 607. Philadelphia: F. A. Davis Company, 1938.

THIS is not a dictionary in the ordinary sense of the word. Instead, it is more of a glossary of information compiled on certain subjects, which predominate in this case over the more general knowledge on all topics found in ordinary dictionaries. As a source of information on foods and nutrition, anatomy and physiology, diseases, first aid, materia medica, psychiatry, physical therapy and surgery, it may supplement the usual references.

In an appendix to the book may be found "Muscles of the Body with Their Action, Origin and Insertion"; "A Glossary of Latin Medical Words"; "English, Latin and Greek Equivalents"; "Nerve Plexuses of the Sympathetic and Cerebro-Spinal Systems," and "The Interpreter," a unique conversational guide in English, French, German, Italian and Spanish languages, specially arranged for obtaining a diagnosis.

S. W. J.

Mental Conflicts and Personality

By Mandel Sherman, M.D., Ph.D. Price, $2.25. Pp. 319. New York: Longmans, Green & Co., 1938.

THE understanding and treatment of mental conflicts is now regarded as one of the most important functions of the mental hygienist. Dr. Sherman finds that these conflicts do not usually arise suddenly but have had their origin in childhood. As the individual meets more and more difficult problems he often expresses himself in undue emotional tension and maladjustment. The author presents a systematic evaluation of the more important theories regarding the role of mental conflicts in determining human behavior. There is a liberal use of case study material. The author would greatly strengthen his book in revision if he wrote a chapter on the training of children to avoid maladjustment in education. After all the teacher's best work should be in the field of prevention.

J. M. A.

Cause and Prevention of Disease

By William Harvey Perkins, M.D. Price, $7.50. Pp. 713. Philadelphia: Lea & Febiger, 1938.

THIS is a scholarly book of special value to students of public health and all those who are especially interested in the prevention rather than the cure of disease. The author laments that such "a disgracefully small amount of present knowledge has been applied in practice." It is increasingly evident, he believes, that the preventive point of view will dominate medical service in the future. The book contains most of the current applications of preventive medicine and hints at a few that may hold. This volume covers comprehensively the causes of specific diseases with the idea of influencing the operation of effective causes in the direction of health and away from disease. College and university teachers should find this an excellent book for reference.

J. M. A.

PUBLISHERS' ADDRESSES

The following list contains the addresses of publishers whose books are reviewed in this section:

John Wiley & Sons, 440 Fourth Ave., New York City.
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Lea & Febiger, 600 S. Washington Square, Philadelphia, Pa.

GETTING READY FOR MARRIED LIFE

(Continued from page 554)

mality. If the mother had possessed even a recessive tendency to the same defect, all the children would have shown the deformity.

The most spectacular hereditary disease is hemophilia, widely known through the history of the Spanish royal family. It was in the heredity of Queen Victoria, wife of the last Spanish king, Alfonso. The disease is characterized by excessive bleeding from slight causes and attacks only male members of the family but is transmitted by the females.

Other diseases, such as diabetes, may show hereditary tendencies. The susceptibility to tuberculosis is not so grave, when care is exercised to avoid causes which would aggravate the tendency; the disease itself is not inherited. Mental and nervous diseases, however, are of great importance from the standpoint of heredity. Ten per cent of epileptics have had an epileptic parent. Hysteria, neurasthenia and obsession neuroses occur as family diseases. In marriage between feebleminded and normal individuals, about half the offspring will be feebleminded. A feebleminded girl, who escaped from an Ohio institution, was not found until she was ultimately returned with ten feebleminded children. The aggregate cost of maintenance to the state has been over $4,000 a year. In one rural county of Ohio every single relief case in the county was traced to a common ancestry, two feebleminded parents. Goddard tells of forty such marriages with 220 feebleminded children and only two normal ones.

In most forms of insanity, no other cause than hereditary predisposition has yet been found. This is particularly true of schizophrenia, the commonest form of insanity. Furthermore, this tendency may be transmitted through several generations who are seemingly free from the taint, until one of the family marries into a family with the same recessive tendency, and their children show evidence of mental disease.

A form of mental disease associated with pregnancy, known as puerperal insanity, is of interest here in family history, for usually it will be found that some mental trouble existed in that family. Any history of nervous breakdown may have been evidence of mental disease. In similar category we would place alcoholism.

The importance of heredity is twofold; it concerns disability and childbearing: disability, because either partner may develop the characteristic family disease and be unable to carry on normal duties; childbearing, because if the taint should appear in the children, their lifelong care and support will be a heavy burden.

Now the personal history. What about the habits of each partner? Such conditions as alcoholism, drug addiction, sexual promiscuity or abnormal sex practices are dangerous factors to combat. If he or she has not learned social behavior before marriage, there is little hope of change afterward. To marry a man to reform him is to spoil two lives instead of the original one. You will take the burden off the hands of his weary relations to make it your own. They may so welcome the relief that they conceal or minimize the facts. Where the girl's character is in question, the same holds true. Do not be duped.

What is the significance of previous personal illnesses? What has been said of hereditary diseases applies equally well here. Does the disease in question affect the ability of this person to carry on his share of the marriage contract? Of these, venereal disease, which probably occurs to you first, will be discussed last. Rheumatism and its frequent complication, heart disease, might mean disability or shorter life; if present in the wife, there will be few or no children because of hazard to an impaired heart. All this depends, of course, on the character of the heart lesion and the outlook toward comfortable financial conditions to minimize strain in rearing children.

Scarlet fever, which has been complicated by kidney disease, carries the same chances, and kidney disease, whether known or merely latent, may flare up with serious complications in childbirth. Hence it is important to know in advance and plan in the light of this known factor.

The diabetic, thanks to insulin, can usually live out life's normal span, if intelligent attention to diet is maintained under strict medical supervision. Only the intelligent diabetics will live this long, for only they appreciate the importance of the diabetic regimen. Whether the woman with well established diabetes can or should have children is another question.

Tuberculosis, in the opinion of a doctor who has long observed these cases, has the following implications in marriage. While one partner has active tuberculosis, with tubercle bacilli in the sputum, he should defer marriage to protect his mate from the infection. When an active lesion has subsided under modern methods of treatment, marriage should be put off for at least two years after full resumption of work. If both persons are tuberculous, having perhaps met while undergoing the cure, they may marry if their economic state is satisfactory. This often makes a well adjusted marriage because of their sympathetic understanding of each other's problems and the shared necessity for a more careful regimen of life adapted to their health program.

They will realize the danger of an old tuberculous process lighting up with pregnancy or with breast feeding of a child. The lime formation, which had sealed up a tuberculous focus in childhood, breaks down when the demand of the body during pregnancy comes for lime, and lactation causes this protective wall to be absorbed. This allows the tuberculous infection to spread.

This personal history elicited during the premarital examination will reveal any mental or nervous peculiarities, some of which can be cleared up at once. Others may be more serious, requiring time and patience, but are best treated before marriage. Phobias or obsessions, if allowed to persist, may change the whole outlook on married life. The misery they cause is all so needless and futile. The repressed sense of guilt attached to minor indiscretions not worth remembering, scraps of misinformation, unhealthy prudery—these need only to be brought out into the light of common sense to be banished forever. Often it is a brooding memory of long abandoned sex habits of adolescence, giving rise to the unfounded fear that they may have caused impotence. Buried fears fester like a sliver thrust deep under

the skin. Bring them out in consultation with your physician. I have in mind a young man who suffered mental agony imagining that a simple cold sore on his lip might be a syphilitic infection. He became so morbid, before he was driven to seek treatment, that not even repeated negative tests could cure his fixed obsession. It will take time and patience; meanwhile marriage must be deferred until he is convinced. Again a young woman, whose mother died suddenly of an embolism (clot in the brain) following childbirth, associated childbirth with death. So great was her fear of pregnancy that marital relations were impossible until the mental slant was corrected. Some deep-rooted complexes require persistent effort of doctor and patient before they can be discovered and dissipated. Many of these are related to sex. For example, an individual who had never had any interest in sex, being undersexed, suddenly decided to marry, then developed a deep fear of impotence. In reality, he was entitled to expect that normal sexual balance would ensue. In advance of marriage it was possible to banish this fear of impotence by definitely determining the facts through laboratory examination. There are laboratories in each locality equipped to carry out this procedure.

Now suppose there is a history of venereal disease, syphilis or gonorrhea; what relation have these to marriage and the bearing of children? Fortunately, increased knowledge of syphilis, together with additional methods to combat it, make the outlook for the syphilitic much more hopeful than in past decades. It is even estimated by some physicians that this chance for getting well is almost as good as that of the person who has typhoid or pneumonia. In spite of this optimistic outlook, it must be borne in mind that the infection may become active again after many years of freedom from symptoms. Sequels such as locomotor ataxia and other late complications cannot be excluded with absolute certainty.

The syphilitic does not necessarily have little expectancy of normal living. Under certain conditions, it may even be possible for him to marry and have normal children free from taint. However, before this is permissible, prolonged treatment must be given and a definite time must have elapsed, during which there have been no symptoms. This matter of time is most important, since a negative test, after having had a positive one, does not always imply a permanent cure. A return to a positive reaction, indicating active syphilis, is by no means rare. As a rule, however, syphilis is not contagious after the fifth year of infection. A couple could, therefore, enjoy many years of normal married life without one infecting the other and without any effect on the offspring, provided, of course, that the husband is the infected partner. The danger of active syphilis is not only infection of the marital partner, but also of the offsprng.

What can be done for those people whose marriage outlook is normal? Banning and Moore sum it up this way, "Marriage is a partnership with hazards. Those who enter it are willing to face many of them because of their affection, because of the pleasure of life together. They should be allowed to do so, after being as fully warned and informed as possible. They should not be allowed, no matter how great their mutual love, to marry if it is going to mean the spread of syphilis and the production of children unfit for life."

There are many other angles regarding syphilis and marriage, which cannot be discussed here. When the question of syphilis arises, your physician will give you counsel.

Where a person about to marry has had gonorrhea, an even more difficult problem arises. The diagnostic findings are not as conclusive, and the necessary pelvic examination is not always possible in the case of young women.

An eminent authority on gonorrhea lays down these rules for indication of a cure:

1. Entire absence of discharge.

2. Microscopic absence of gonococci in certain fluids and sediments.

3. Inability to produce recurrence of the discharge by means of irritating procedures.

4. Lack of recurrence within three months after resuming sex activity. (Incidentally, alcohol is a factor in producing a recurrence.)

You will not fully understand these statements; they are given to show how difficult it is to determine whether it is safe for one who has had gonorrhea to marry. The significance of gonorrhea to a marital partner is so grave that it must be ruled out before marriage. Because of reinfection, after marriage it is difficult to cure. About all that is necessary to tell you here is that it frequently requires pelvic operations in women and that both in men and women it often results in sterility.

After taking the family history, then the personal history, the physician will proceed with the physical examination, beginning with a general check-up to detect any condition that needs correction. In addition, an x-ray picture of the bride's chest is a good measure, since old tuberculous lesions that passed without recognition at the time may cause trouble during pregnancy or lactation, unless their presence is known and special care given at that time. The pelvic measurements of the young woman will be taken, in order that she may be assured that her children can be born in the normal way. Defects, irregularities, underdevelopment or even absence of organs of generation sometimes occur, in which case the prospective partner should be informed of the abnormality; otherwise annulment could be legally granted on the ground that the marriage could not be consummated. Correction of some conditions may be possible; if not, marriage may be inadvisable. The presence of a tumor may obstruct the birth canal, and removal may be indicated. Occasionally the condition of the hymen may require advice or treatment prior to marriage.

In the young man, certain abnormalities may occur which raise a question of potency or of consummation of marriage. Determination can be made in advance, if the man is emotionally disturbed by fear of impotence. During the consultation, he will avail himself of much helpful advice about the marriage relation.

When, after prolonged engagement, married life still cannot be financed unless both partners continue to work, or when the burden of a relative's support must be carried indefinitely, requiring both salaries, such a couple may wish to be instructed in some form of procedure which would permit

them to marry and to defer for a time their plans for a family. There is a division of opinon on this subject based on conscience and religion, for some people do not believe contraception is wise or morally right. They must continue to defer marriage, for continence within the marriage relation, which alone would permit assurance of the wife's salary, is generally found impractical. Those who do wish such instruction to postpone the coming of the first baby or to plan the spacing of children will do well to talk it over with their physician. I do not need to remind you that desire for children is normal and usually essential to a happy marriage. Those couples denied the joy of parenthood will enlist every resource of medical science to enable them to have a child.

This discussion of so many phases of the premarital examination may seem rather overwhelming to some persons because of the many different abnormalities to be ruled out. While your physician will look for these and any others suggested by your own personal problem, a number of them will be quickly dismissed by his careful questioning and practiced deduction. You will be entirely unaware that so many correct conclusions are being made, for if the engaged couple is obviously free from these hazards to marriage, not even the names of them will arise in the examination.

Now let us sum up the assurance that is developed in such an interview:

1. That both persons are free from venereal infection.

2. That both persons are free from any structural defect of the sex organs, which might prevent consummation of the marriage or require correction before marriage.

3. That no psychologic complex exists to make marriage an unhappy experience.

4. That there exists no factor in heredity which might make it unwise to have children.

5. That no organic weakness is present which would affect future plans in marriage. If such known condition does exist, advice can be given to minimize its hazards.

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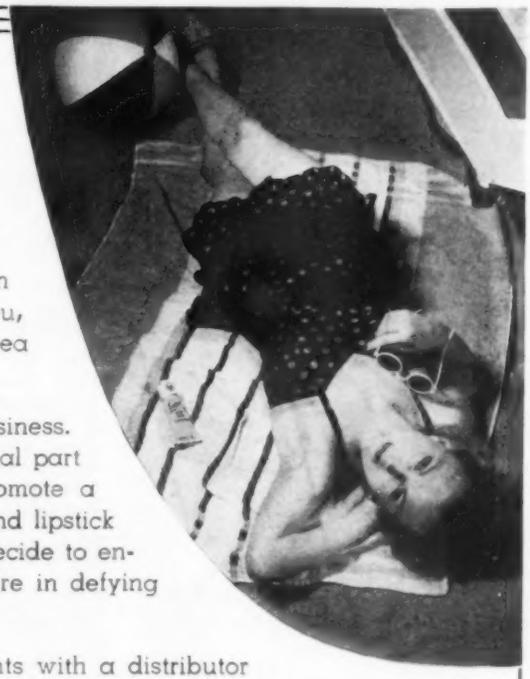
These books should be ordered through the publisher. They may not be obtained through HYGEIA, unless published by the American Medical Association.

This Summer



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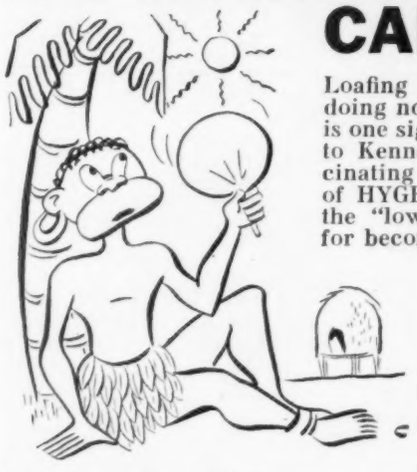

CAN YOU LOAF?

Loafing is not the same as shirking. In fact, doing nothing is a fine art, and skill in loafing is one sign of a superior intelligence, according to Kenneth P. Wood, who contributes a fascinating article on the subject to the July issue of HYGEIA. Here is your opportunity to get the "low-down" on loafing, with suggestions for becoming an expert.

Swimming Safety

How to avoid some of the hazards that accompany water sports is discussed in the July issue by Dr. Lewis J. Silvers. He tells how to protect the nose, sinuses and ears from infection while swimming, and gives other timely advice to help make it healthful instead of harmful.

War on Ragweed

A call to battle on the "ornery" ragweed is sounded by Dr. Ramsay Spillman, who offers a feasible procedure for eradication of the pest.

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THE VALUE OF THE TUBERCULIN TEST

(Continued from page 514)

cause of the disease, x-ray studies made every ten days or two weeks may be of great value. If within a month or six weeks these films show that the shadow has completely disappeared, one is reasonably safe in assuming that the disease was caused by an acute infection; possibly the original shadow was due to resolving pneumonia. If, however, the shadow persists longer, remains unchanged in appearance or increases in size or shows evidence of cavity formation, one is then reasonably certain that the condition is chronic and may be due to tuberculosis, cancer or abscess. The honest physician will ultimately determine the diagnosis with accuracy, for he must do this in order to treat the disease successfully.

These are the important facts to remember:

1. The tuberculin test when properly administered is absolutely without harm and cannot cause tuberculosis.

2. It determines with a high degree of accuracy the presence or absence of living germs of tuberculosis in the animal or human body. Indeed, it is the only accurate standard we have to determine the presence or absence of tuberculous infection.

3. The x-ray examination is effective in finding evidence of the first infection type of tuberculosis in the human body in about 20 to 25 per cent of the persons who have it. In cases of reinfection, which is the destructive type of tuberculosis in the lungs, the x-ray shadow alone does not suffice in making the diagnosis, as other diseases cast shadows which resemble those of tuberculosis.

4. The final diagnosis must be made by assembling all evidence, such as the tuberculin reaction, shadow on the x-ray film, microscopic examination of blood and tissues and bronchoscopic examination, carefully analyzing and evaluating each bit of evidence. To stop with the tuberculin test and the x-ray examination is absurd. These are indications to determine who should be more completely examined.

The roses make the world so sweet!
The bees, the birds have such a tune,
There's such a light and such a heat
And such a joy in June.

THUS do the poets rave about June! Lowell asks us, "What is so rare as a day in June?" and reminds us that "Then if ever come perfect days."

With the exception of December with its joyous Christmas and holiday spirit, June is probably the most beautiful month of the year. Clear skies, gorgeous sunshine, gentle winds, fragrant roses, weddings, bridesmaids, the sweet girl graduates, vacations and travel in distant lands give tone and color to this month of months.

To teachers and pupils, graduation is perhaps the most significant event. It marks the end of a long journey. Step by step boys and girls have pushed onward, until finally the last step is taken. There is a sense of achievement and victory. Honest effort has been rewarded.

And what does graduation mean apart from its show of dress, flowers, oratory and diplomas? It would be hard to say. Its meaning has changed from year to year as our philosophy of education has changed. Certainly it is different from what it was a few decades ago. Then graduation tended to mark *finis* at the end of one's learning career. Then the commencement speaker invariably congratulated the class on finishing their education and being equipped to go out into the world and face life. Now there is a general feeling on the part of teachers, pupils and parents that graduation is not the end of the educational process but rather a breathing place on life's journey. Education means opening doors to all the good things of life. The graduates will continue to read, study, think, experiment and learn about life. They may even attend other schools and have other graduations.

If we think of graduation as being synonymous with the objectives set for us by the National Education Association and the National Congress of Parents and Teachers, we shall find health the first objective: "a sound mind in a strong and healthy body." There is no doubt about this, for in practically every teachers' meeting we find this doctrine enunciated. It is pleasant and inspiring to the eyes and ears; but one may well wonder to what extent it is achieved. Of one thing we may be certain: The class graduating today is far healthier than a class graduating ten or twenty years ago. Medicine has progressed. There are better doctors, nurses and dentists. Schools are paying more attention to health. And yet one wonders whether a good deal of this talk about health is still too much a matter of words. Yonder boys and girls graduating from a high school class have been carefully trained and examined in Latin, mathematics and English. Have they had the same sort of training in health? When did they have their last physical examination by a school physician? Was it thorough? How many minutes did it take? What was discovered? As a result of such examinations, how many of these cases were followed up in their homes? Are these boys and girls free from remediable defects? How many of them with all their knowledge of science, mathematics and Latin know the fundamental essentials about the structure, function and care of their own bodies? Is there any health requirement for graduation? Should there not be?

Should not graduation also mean graduation in health?

Ewing Galloway

These children have been carefully trained in Latin and mathematics, but what do they know about health?

SCHOOL and HEALTH

Conducted by J. MACE ANDRESS, Ph.D.

GRADUATING in HEALTH

Putting a Punch in Health Instruction

By DAVID B. ROSENBERG

Under this dynamic title Mr. Rosenberg, who is a teacher in the Manhattan High School, New York City, suggests some new ways of making health education attractive and vital to pupils in a boys' high school.

WE may, indeed we should, regard our students' noninterest in health as an eminently wholesome condition; but we cannot escape seeing that this condition makes the presentation of interesting, meaningful, truly educative health lessons a rather formidable task.

The task, of course, is that mighty pedagogic term *motivation.* But here the term means not only all that it means to every teacher; it means, in important addition, such devices as will impress the pupils with the importance and desirability of changing their ways of living.

Striving to meet this challenge, every health teacher finds through experience the devices or technics which meet it successfully. In the following lines some fruits of experience, in no sense unique or all embracing, are passed along for suggestive consideration by the readers of this department.

Some typical lessons, with examples of motivation found successful, are cited:

Posture, poise, bodily carriage. In place of the too familiar adjuration and even the threat about cramped organs and their effects, use was made of a fundamental adolescent drive: the desire for recognition and approval, plus the human desire for social-economic advancement.

A boy with excellent bodily carriage "acted" before the class by slouching. "Ten or fifteen years from now," the class was told, "many of you will be in executive positions. Would you want to employ this fellow in your concern?" Almost innumerable other means suggest themselves to prove objectively how vivid an impression one's posture makes on others. "The walk and carriage and appearance of the athlete come from *athletics;* they cannot be posed convincingly. Good posture must be a part of you, habitual. 'Standing up straight' only when applying for a job or when eager to impress some one is of little use." This principle can also be proved by objective example.

This type of approach impresses adolescents as physiology never can; but to get the lesson across, physiology and anatomy must follow, never precede, the all-important motivating approach cited.

Dental health, focal infections. The experience of any well known athlete is a guarantee of interest. Bob Grove and Vernon Gomez, among others frequently named in the press, present case records useful in this respect.

"Lefty showed up in training camp underweight, most of his 'stuff' missing. Careful training and clean living did not help. The physician made the astonishing recommendation that Lefty's teeth be examined. Repair and extraction of several teeth soon followed; the pitcher's appearance, health and baseball ability improved amazingly. Who can explain this?" The tie-up between an admired big leaguer's improvement through checking the effects of infective foci and Johnny Jones who is failing in school or deficient in vitality when competing in sports is simple and clear.

Taking care of hearing and sight. The approach indicated by Andress, Aldinger and Goldberger in "Health Essentials," a textbook used in the New York City schools, is of proved worth. "Try to imagine going through life without being able to see or to hear." The pathetic deprivation must not be overemphasized; but it makes a cogent appeal to the basic drive for self preservation. The book cites figures showing how appalling is the number of afflicted; this makes an appeal to one of man's highest feelings—sympathy. A third spark is added by showing (rather, letting the pupils show) how handicapped one is in sports, in industry or school work or in such prosaic activities as crossing a street, when eyes or ears are only slightly deficient.

In lessons involving accident prevention, as first aid and consideration of disease and immunity, what may be called the dramatic approach illustrates another successful type of motivation.

Teachers have much to learn from authors; particularly—heretical though this may be—popular fiction authors. The author's livelihood depends on gripping attention; his material is presented graphically, with a challenge, a

Carl Berger

In lessons on first aid, the dramatic approach illustrates a successful type of motivation.

punch, in the opening lines. Think what we will about the ultimate value of popular stories, they embody a technic, a method of motivation if you please, well worth using in teaching.

First aid can be introduced intriguingly this way. For illustration:

"Troublesome thoughts, let alone tragedy, are out of place on a hiking trip. Such thoughts were not in the minds of Walter Lane and Harry Dann on that unforgettable September morning when they wound their way through the underbrush lining the side of the Post Road, near the town of ———. But trouble and tragedy literally shrieked to their ears in the screech, followed by a deafening smash of metal and glass, that broke upon them with terrifying suddenness. They bolted headlong for the road, grimly expecting what they found there at the roadside. A sedan, its radiator almost encircling a huge tree, an ugly, smoking ruin. One man, sprawled fully ten yards from the car, unconscious. . . ."

Enough has been cited. Press clippings afford unlimited material of this interest-seizing sort. If frequently it is unpleasant—well, first aid and safety measures are designed for unpleasant situations and grimly real ones!

The fact that the driver in the situation cited was intoxicated points a potent moral without moralizing. When it is described how the boys, thanks to first aid knowledge, applied tourniquets, splints and aromatic spirits of ammonia to the injured men, employing the first aid kit they had learned to carry with them while hiking, the classroom lesson is not only motivated but under full swing. "What are tourniquets? Splints? Aromatic spirits of ammonia? How used? When? Could you do as these boys did? Or, through ignorance, would you have to waste precious minutes running for help or stand idly by while a fellow human dies?"

This method is adapted splendidly to any first aid lesson. Using press clippings, it is the method employed by Cobb in his most commendable clear, yet grippingly realistic, book, "Everyday First Aid."

Popular books, plays, movies present a veritable mine for interesting material. The only requisite is to find out what book or play, related to the lesson, has recently commanded the pupils' interest. The Hollywood story of Zola's life has left on the public a vivid impression of the hazard of carbon monoxide; mere mention, in query form, of the picture's tragic scene will bring from the class almost unanimous eagerness to tell what happened and why.

Orson Welles' radio dramatization of H. G. Wells' conception of an attack from Mars is still an interesting topic; for the health teacher it is a splendid source of motivation for introducing a lesson on bacteria. All pupils know the story; most of them heard the broadcast or heard about it. Reference to it evokes instant attention, then: "What was the slip in the plan of the Martians that just failed to conquer the earth?" The answer, if it need be given here: The Martians were not immune to the disease-producing organisms on this planet.

The movie, "Life of Pasteur," "Microbe Hunters," the Metropolitan's "Health Heroes" series, Lewis' "Arrowsmith" and a countless list of magazines and newspapers afford similarly effective devices. This brief article has achieved its aim if it has reminded the reader of the vital educational use that may be made of the many items, personalities and activities in which his pupils are interested.

A Food Project at Commencement

By FLORENCE SCHAEFFER

This is the story of a unique commencement. It was centered around a banquet planned in detail by a graduating class. It was successful and educational since it grew out of the classroom work of the children. Teachers, parents and pupils cooperated. Mrs. Schaeffer teaches science in seventh and eighth grades at Forest Hill School, Akron, O.

JUNE graduation for an eighth grade class was approaching once again. What could be more fitting than a food project covering the major part of the term in science and asking the parent to cooperate and contribute definite things to the situation?

Food is recognized as the most important of all factors which influence the health and growth of a normal child, for food furnishes the materials for actual body building and for energy. For a fine, strong body, superior building materials must be used, and the technic of preparing and serving it is of major importance. To create interest in this class of forty boys and girls and to obtain the cooperation of the parents, a commencement banquet built around this subject and its many ramifications was planned.

The first consideration, of course, was cost. This was met by a contribution of 3 cents a week from each child for a period of nineteen school weeks of the semester—a total of 57 cents. This paid for the child, his father and his mother, who were our guests at the banquet.

An economical and well balanced menu was then planned. It had to be one which could be prepared by the children under very limited conditions both in the home and in the school. It consisted of tomato juice cocktail, beef loaf, scalloped potatoes, buttered new peas and carrots, cole slaw, home made refrigerator rolls, jelly, strawberry chiffon pie and coffee for parents.

Each one of these articles was made during the semester in the classroom and the recipes given to the children. The enthusiasm was apparent, for not one child failed to bring in his money, and even the boys volunteered to make these articles for commencement. We purchased the food in large quantities and apportioned it to the children to be made at home and brought in fifteen minutes before the banquet. Nine children were given 4 pounds of ground beef, two large onions, two eggs, 2 cupfuls of bread crumbs, 1 pint of milk and one green pepper for the meat loaves. In the same way the necessary ingredients were apportioned to other children for the other articles on the menu.

Various children were assigned duties so that the meal would pass off smoothly. For example: Two boys cleaned the refrigerator in the school kitchen and purchased ice for use; other boys set up the tables; still others furnished flowers and candle sticks for decoration with the result that the tables were beautiful. Each child brought service for three, thus eliminating the drudgery of mass dishwashing.

All this took careful planning to even the smallest detail.

At exactly 5: 30 p. m. the parents were ushered to their places designated by attractive place cards made by the children. A menu and program of the commencement were also to be found at each place. These were artistic little figures made by the children themselves.

At 5: 45 p. m. the graduates marched in and took their places. Conversation was directed to subjects such as the cost of food, the six fundamental nutrients, cleanliness and other topics pertaining to food.

The result has shown itself in a finer spirit between parent and the school.

What Are Grain Products Made of?

By ETHEL AUSTIN MARTIN

Grain products comprise such a large part of our food that class experiments in taking some of these products apart should be interesting and illuminating. Mrs. Martin, director of the Nutrition Service of the National Dairy Council outlines additional food experiments for both the younger and older children in the tenth article of her series on these experiments.

PEOPLE in almost every part of the world use one or more of the cereal grains as staple articles of diet. Cereals are eaten in the form of grains as such, or as flours, breads and breakfast foods. This widespread use of grains is due to several circumstances. They are relatively low in price; they are easily grown, stored and transported, and they are adaptable in the preparation of many foods.

Energy (calories) is the chief contribution of that entire group of foods made from cereal grains. The more nearly cereal grains are served in the form in which they are grown, the more do they contribute other dietary essentials in addition to calories. The more highly milled, that is, the whiter, the cereal is when served, the *less* does it contribute in addition to calories. Naturally the various cereal grains differ somewhat in food value. For the most part, however, the difference between the composition of the whole grains of two cereals is far less than between the different parts of any one grain as separated by the usual milling processes. In their natural form, grains are important sources of roughage, iron, phosphorus and vitamin B_1. The amount of these different essentials obtainable in the final grain products depends on the extent to which the outer coats and the germ of the grain have been removed in the milling process.

The mineral elements in grains are largely concentrated in the germ and in the outer layers of bran. In these parts iron, phosphorus and copper are present in significant amounts. But at the present time, the whole kernel of grain is not used commonly for human food. With the increase in shipping and storing of grain foods it has become the practice to remove the germ because it spoils quickly and because the oil in the germ becomes rancid. The practice of removing the bran arose from the demand of consumers for a beautifully white product. Most so-called "whole-grain" products contain more or less bran but do not always include the germ.

As in the mineral elements, vitamins are largely concentrated in the germ and bran of cereals. Both are excellent sources of vitamin B_1, and the germ contains some of vitamins A and G (riboflavin). Vitamin C is present only in sprouting grains and therefore is not a factor in ordinary cereal products. Cereals contain vitamin D only when it has been introduced by a special process.

Cereals in Our Diet

Budget authorities tell us that one fifth or more of the family food dollar should be regularly spent for cereals. The exact proportion should vary with the size of the total food fund, a larger amount being recommended for restricted budgets. Breads are widely regarded as a natural part of every meal. A hot cereal for breakfast is urged for children, particularly in winter, as a wholesome, satisfying dish and as a carrier for milk.

Because grain products form such a large proportion of the diets of people throughout the world, the proteins of grains make a substantial contribution to the total protein intake. Cereal proteins, however, are not of such quality as to be relied on as the sole source of protein. Fortunately the proteins of milk are relatively rich in those elements in which grain proteins are poor. Likewise, milk supplies the calcium and vitamin A lacking in cereals. Research has repeatedly confirmed the principle that the most successful diets are built around bread and milk.

It is estimated that rice is the main article of food for a half of the world's population. In oriental countries rice often occupies a larger place in the diet than is correspondingly true of wheat, rye, barley and potatoes, combined, in the dietary of the temperate zones of the western world. Wheat is the typical bread-making grain and the one most used for food in the United States, in English speaking countries generally and in probably the greater part of Europe. Wheat is also used for breakfast foods and such other products as macaroni, spaghetti and noodles. Rye is as commonly used in northern Europe for bread as we use wheat. Barley is used in human feeding chiefly as pearled barley suitable in making soups and as patent barley flour for infant feeding. Oats are used generally in Europe and America for human consumption. Oats are used chiefly in breakfast foods. Corn is used as meal, breakfast foods, hominy, oil, starch and sirup.

Wheat and rye are better for making bread than other cereal grains because they contain more of the protein called gluten. When wet, gluten forms a sticky mass which holds air created by the addition of leavening agents to make breads rise. Yeast, baking powder, soda and eggs are examples of leavening agents. The making of bread, which was at one time regarded as one of the basic household tasks, is now chiefly a commercial industry. One of the most significant developments in bread making in recent years is the improvement in its food value by the addition of dried skim milk. As pointed out previously, milk makes an admirable supplement to cereal grains.

Application to the School

The possibilities for making cereal lessons interesting are almost limitless because of the many different kinds of grains used for food and the many different ways in which they are used. Almost every class will be able to investigate at first hand at least one step in preparing cereal grains for human consumption. In rural communities there will be opportunities to see the earlier processes, such as threshing, hauling and shipping the grain. In metropolitan centers, factories making bread and manufacturing breakfast foods offer fascinating experiences.

Following their investigations outside the classroom, students will be eager to take apart one of our commonest cereal grains to see what it gives them in the way of dietary essentials.

Experiment with Flour: I

Problem

To take whole grain flour apart.

Materials

Whole wheat flour
Water
Tincture of iodine
Flour sifter
Small mixing bowl or beaker
Spoon
Test tubes
Dropper

Seventeenth Experiment

Sift about ¼ cupful whole wheat flour into a bowl or beaker. The brown flaky material which is left in the sifter is called bran. Removing the bran from cereal grains is the first step in taking them apart.

To the flour which has been sifted add enough water to make a stiff dough. Knead or stir the dough a few minutes. Then cover with cold water (see illustration). Knead it thoroughly under water for about five minutes. The water becomes white. Then take out the dough and squeeze it dry. Save it for the next experiment. Let the water stand for an hour or more. A white substance will settle out of the water and collect at the bottom of the bowl. Pour off the water carefully. Feel of the white substance, and test it for starch (see second experiment). This is raw starch and shows the characteristic blue color when iodine is added to it.

Results

When whole wheat flour is sifted, much of the bran is screened out of the flour. When a stiff dough is made of the remaining flour and the dough kneaded thoroughly under water, a white substance in the flour is washed out into the water. The iodine test shows that this material is starch.

Conclusion

A simple way to take whole wheat flour apart is to remove the bran with sifting and to wash the starch from the remaining portion.

Adaptation to Different Grades

Children in the lower grades will enjoy the experiments with flour thus far and can appreciate the importance to good bread making of the sticky mass which is saved for the next experiment. It is suggested that the tests be omitted for the younger children and emphasis be placed on becoming acquainted with its peculiar elastic quality.

Upper grade students will enjoy following through the tests suggested in the next experiment. In addition, if a microscope is available, they will be fascinated to see in magnified form both raw and cooked starch cells. If this is desired, use some of the starch from the previous experiment. Add water to another sample of the starch, and cook it for about three minutes. This presents a different appearance under the microscope and gives an indication why starch is usually cooked when eaten by human beings.

Experiment with Flour: II

Problem

To find what is left in flour after removing bran and starch.

Materials

Washed dough
Fehling's Solution (Parts I and II)
Tincture of iodine
Nitric acid
Ammonium hydroxide
Test tubes
Dropper
Bunsen burner or other flame
Ordinary note book sheets
Asbestos sheeting
Dissecting needle or forceps
Tripod
Knife
Flat plate

Eighteenth Experiment

When the starch is washed out of the dough, a rather dark sticky mass is left. Applying the routine tests to this dough shows what it contains.

1. Test a part of the washed dough for sugar (see first experiment).

2. Test a part of the washed dough for starch (see second experiment).

3. Test a part of the washed dough for fat (see third experiment).

4. Test a part of the washed dough for protein (see fifth and sixth experiments).

5. Test a part of the washed dough for ash (see seventh experiment).

6. Test a part of the washed dough for water (see ninth experiment).

Results

1. No reddish color appeared when Fehling's solution was added, showing that flour has no sugar content.

2. A faint blue color appeared when iodine was added, showing that the washed dough still has some starch. The more thoroughly the dough is washed the less starch is present and the fainter the blue color.

3. No grease spot appeared when the dough was rubbed on note book paper, showing that flour contains too small an amount of fat to show in such a test.

4. An odor of burned feathers when the dough was burned and the orange color which appeared with the nitric acid and ammonium hydroxide test showed that the washed dough contains protein. This protein is called gluten and is the elastic material in flour which makes it possible to use leavening agents in making breads.

5. The ash which remained when some of the dough was burned showed that flour contains mineral matter.

6. The dried appearance and crustiness of the dough on exposure to air for several hours showed that it still contained some water after it had been squeezed dry at the end of the washing process.

Conclusions

The foodstuffs present in washed dough can be determined by simple tests for sugar, starch, protein, ash and water. This portion of the flour contains protein and ash and some starch and water. It contains no sugar or fat.

The findings from these two experiments should now be assembled and summarized. The positive tests reveal the dietary constitutents present in the various parts which make up wheat flour (vitamins excepted). Tests which give negative results show which dietary essentials are not present in whole wheat flour.

Teaching Dental Health to High School Pupils

By JEAN V. LATIMER

Miss Jean V. Latimer, coordinator in health education for the Massachusetts Department of Public Health, strikes a rather new and significant note in health education in this article, the tenth of her series on "Little Journeys Among High Schools." The fundamental approach in the lower grades has tended to obscure the necessity for dental education in the high school.

THE importance of the problem of dental health demands increasing attention from school authorities, even though it is taken for granted that the basic attack on the problem should begin with the prenatal and preschool periods.

It is now generally recognized that the problem cannot be met unless continuous attention is given to the teeth of school children, especially as they are passing through the adolescent age, since children at this age are particularly susceptible to dental caries.

In a study made in Massachusetts on conditions found in the mouths of 2,554 children ranging in age from 2 to 15, at age 15 there were found only 12 per cent of the lower six-year molars in perfect condition; 28 per cent had been extracted because they were abscessed. Therefore, the systematic dental care of the younger child alone is not adequate to solve the problem.

With the addition of a dentist to the staff of the Division of Child Hygiene of the Massachusetts Department of Public Health, a more concerted effort has been made to attack the entire problem.

Two years ago we prepared a teaching unit for experimental use in junior high schools, which was to be included in the tentative plan as developed by the Committee on Health Education in the Secondary Schools of the Massachusetts Department of Education.

Believing that the most effective health teaching is based on actual health needs, the services of a dentist from the state department of public health have been given to certain schools to conduct an actual survey of the high school pupils' mouths before the unit was taught. Not only has the home room teacher been given a copy of such findings but each teacher was asked to see that each pupil knew and understood the conditions of his teeth. Score cards called "My Achievement Record for a Healthy Mouth" were used as incentives for measuring individual improvements.

During recent months it has been my privilege to observe some of the teaching on this unit in various schools throughout the state.

One high school teacher used as an approach to this study an informal discussion of such questions as:

1. How do attractive teeth improve personal appearance?

2. Why are sound teeth important for health?

3. When did you last go to your dentist? For what purpose?

4. Is there a dental clinic in your school: What age groups are cared for?

5. Have any pupils ever had x-ray pictures taken of their teeth? Why do dentists take x-rays?

In one high school a class was studying actual x-rays of teeth or photographs of teeth obtained from a dentist's office. One of the pupils in this class was heard to exclaim, "Gee, I never knew before how much there was to learn about the structure of my teeth and jaws!"

The teacher of this class, in connection with this problem was making use of a film borrowed from the Massachusetts Department of Public Health. This film, called "How Teeth Grow," shows the growth, development and arrangement of the teeth and their uses. She was also using the colored pictorial charts published by the American Dental Association, which illustrate the kinds of teeth found in the mouth.

In another high school where the pupils were talented in manual arts, the class was not content simply to make drawings of the various parts of a tooth, in studying "How Teeth are Built and Nourished," but had constructed a wooden tooth model which showed the layers of dentine and enamel. Several of the less ingenious classes had borrowed

such models from the Massachusetts Department of Public Health.

In a rural high school in the western part of the state, I found that a class had modeled teeth by the following formula:

> With a mixture of half flour and half salt, and a little plaster of paris moistened with water, a tooth may be molded by placing this mixture on the form of a tooth which has been previously sketched. When it is dry it will be the raised form of half a tooth and it may be painted in different colors to show the various structures of the tooth.

A class in a school near Boston not only had made a special study of the specific foods which were particularly good for the building and maintaining of good teeth, but they had also made a pictorial chart of such foods. Posters illustrating foods valuable to teeth were also placed in the school halls. From the grocery store they obtained the cost of these foods and planned a day's menu including them.

Also, I find that beginning in the junior high school, teachers are making a serious attempt to teach more about the scientific theories regarding dental decay.

In one class the boys and girls themselves had investigated all the present theories for the cause of caries and were learning the true scientific attitude. They accepted no one cause for decay and believed that possibly there were many factors involved in growing a healthy set of teeth. The wooden models were opened up to show the progress of decay through the inner structure of the tooth. One boy in this class was heard to say "I know now why you should go to the dentist before your tooth hurts."

Since the junior high school pupil is more sensitive than the younger child, less group competition regarding the correction of dental defects is being carried on. But individual conferences with the classroom teacher, the dental hygienist or the public health nurse are proving of real value in stimulating the junior high school pupils to improve their own mouth conditions. Not only guidance but financial assistance for the correction of dental defects is given to the pupils who are in need of it.

The high school boy and girl is throwing off parental control, and unless he is made to realize the consciousness of the problem of teeth and their care and thus to assume individual responsibility, little in the way of results can be expected. This applies not only to seeking professional dental care but to systematic home cleaning of the teeth and the eating of proper foods which will help to nourish and maintain them. In my visits to various localities in the state I have been gratified to see teachers and classes paying considerable attention to such a problem as, "What Is the Junior High School Pupil's Own Responsibility for the Care of His Mouth?"

In one classroom a girl showed me a workbook in which was a composition on "What My Dentist Can Do For My Teeth." She had included the last date on which she had visited the dentist and what corrections were made. Also, she had estimated how much she had spent on other things, such as movies, candy, sports and so forth. Comparing these figures with the amount spent for dentistry, her dentist's bill did not thus seem too large.

Since we know that "people have to be reminded as well as told," I was not surprised to find that one teacher felt that even high school pupils should have a demonstration of the proper way a toothbrush should be used, as well as a demonstration of the desirable types of toothbrushes. She had asked the school dental hygienist to cooperate with her in giving these demonstrations before her class.

We all know that one of the best ways of motivating any type of health education in the high school is through the indirect appeal of personal appearance. This applies particularly to dental education.

One teacher told me that she had found that making posters to illustrate such a caption as "Protect Your Smile" was the most effective device for interesting her girls in wanting better conditions in their mouths.

Certainly at the high school age, boys and girls with their growing intellect are capable of understanding more of the scientific background underlying teeth and their care, as the problem is related to the physiology of the entire body.

My observations have convinced me that good classroom teaching may prove one of the effective ways of improving the dental health of the American public.

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AMERICAN MEDICAL ASSOCIATION
535 North Dearborn Street Chicago, Illinois

PHYSICAL FITNESS at WEST POINT (Continued from page 532)

partment is engaged in a much more subtle work: that of implanting in the cadet the resolve to be always fit. It is not difficult merely to build up the average collegian, compared with the effort to implant in him a desire to continue his gymnastic endeavors, his love of sport and exercise, twenty years later.

First, the Master of the Sword must throw out the use of compulsion as a reason for exercise, because after cadet days and the first few years in the Army, the compulsion would break down of its own weight. In fact, after graduation, the only force now used to compel exercising is that of the annual physical examination in which all those overweight are requested to get into shape. Naturally, there is also the unwritten compulsion of pride in his own abilities that the younger officer feels when giving calisthenics to a company of soldiers and when coaching and playing on their athletic teams.

Offhand there are several reasons for the graduate's continued fitness. One is the pride in his West Point posture or setup. This is inculcated along with the other Academy traditions and is surprisingly strong. Like honor and high principle, it is his code. How much it enters into the individual's daily life depends on each graduate. For these traditions filter into the makeup of this cross-section group in varying degrees of intensity. Second, the athletic department teaches and acquaints every cadet via coaching or competition with almost every sport either in the intramural or intercollegiate system. Emphasis is placed on golf or tennis the last year as useful graduate sports.

Again, the Athletic Association furthers the cadet interest in sports other than those just named. A new rink has brought about a great interest in ice sports, even among the men from the South. Twenty-three squash courts cater to many devotees; badminton, handball and table tennis are available for others. A cadet group of bar-bell men, or weight lifters, was inaugurated this year. And the cadets make up water polo games under their own initiative and play broom hockey for the fun of it. Some learn figure skating; others climb Crows' Nest Mountain for the joy of walking in the open air. There is skiing and tobogganing in the winter. The golf instructor, who is available to all, has a practice room in the gymnasium. There are the weight pullers and bag punchers; there are those who go to the gymnasium with the idea of doing whatever strikes their fancy. They are called, in the cadet parlance, "muckers"—meaning those who are interested in building up their muscles.

This vast panorama of sport and physical activity is in addition to the intercollegiate athletics, which are the physical interest for almost a fourth of the Corps of Cadets—approximately 400 of the 1,800 the year round. The only compulsory athletic phase other than the Plebe gymnasium is the intramural system in the fall and spring. This corps' idea started under the watchful eyes of Colonel Koehler before the World War. Changes in this course were dictated by the war experience, which showed a lack of officers capable of teaching calisthenics and athletics to the citizen Army. Immediately thereafter the intramural system was revamped along different lines by Gen. Douglas MacArthur, with the emphasis on the intercompany schedule and training rather than on the intercollegiate.

In the spring and fall then, all cadets not members of an intercollegiate squad turn out for an hour of some sport after the close of the academic day. The cadets are assigned different sports each season, and duplications are not allowed.

The equipment is issued to the cadets, and each man must be properly dressed for his sport. That the cadets enter into the intramural program with vim is attested by the name "inter-murder," by which this program is known. It is rough—but not so rough as to give West Point the name of a Spartan school where all emphasis is on the ability "to take it"—for such is not the case.

With all this gymnastic work and with the intramural system, the horseback riding, which all do as part of their military work, the marching to meals, the rigorous schedule, the regular hours and prompt meals, the Cadet Corps as a group is kept in excellent physical condition. To be sure, sick call each morning is well attended with broken bones, bruises and of course the usual operations and diseases. This attendance, though, is a direct result of the Academy's insistence that each cadet go to the hospital immediately for the least ache or pain—an important part of its program in protecting their health. "Deadbeating" or "gold bricking" are the classical terms for the slacker, but there is little need of their application to more than a few cadets.

The average cadet, after having been conditioned during his Plebe year and having felt that process continued during the following years in intramural and voluntary athletics, naturally takes to leadership in communicating his knowledge to others. At first, he may do much of this supervision unknowingly as his duty as a cadet officer. Lectures on the care of health are given by the medical staff during the first three years at the Academy, but to supplement these lectures and to teach the cadets how to communicate this knowledge effectively to the men in their future commands, the cadets also receive during their last year a thorough course in hygiene. This course completes the physical education program at the United States Military Academy. Practice rather than theory is the keynote of this plan.

Since West Point believes that a man should "Do a thing; do it right, and be quick about it," he must have coordination of mind and body. It believes that mental relaxation, muscular coordination and physical well-being are served by its physical education program. West Point's aim, therefore, is as outlined: to build the cadet up to its qualifications of physical fitness, then give him the desire and the urge to retain that standard and lastly to teach the cadet to communicate the above designs to others. Many individuals will testify that that aim is well accomplished, for West Point's comparatively small number of graduates have influenced the physical education and health of a great many persons.

HOW TO KEEP YOUR HUSBAND HEALTHY

(Continued from page 502)

hot stove or fussing in the kitchen. Yet on the other hand, even in the hottest weather, food that is not substantial enough or too large a proportion of which is chilled is not good for the human machine.

The main consideration after planning and preparing dinner is that it be eaten under leisurely and pleasant conditions! Dinnertime is no time for a discussion of unpleasant topics, for admonitions, bickerings or complaints. Many a dyspeptic has been created by such conditions. Soft candlelight, flowers and a wife who has taken the trouble to think of a variety of interesting and amusing topics for conversation will make any man forget the business recession and that he has a stomach!

To return to the matter of the yearly health examination. The Health Department of the family being one that she heads, it is up to the wife to see that she does a good job of administering it. When a man is apparently well and strong, it is often hard for him to see the necessity for going to a doctor. But his wife, who is interested in *keeping* him well for a long life, thinks differently. It may save time, trouble and argument not to urge one's husband to make appointments for examinations himself but to say firmly with an air of unquestioned authority, "I am making appointments for our yearly health check-ups with Dr. Black. Will it suit you better to go today or tomorrow?" Because husbands realize as well as any one how important it is to see to such matters, usually they show a heartening spirit of cooperation when approached in such a way. The same method will be effective in the semi-annual dental examination.

If either examination reveals any small disorder or deviation from normal, the time to begin work on it is right away, for it has never ceased to be true that "Large oaks from little acorns grow."

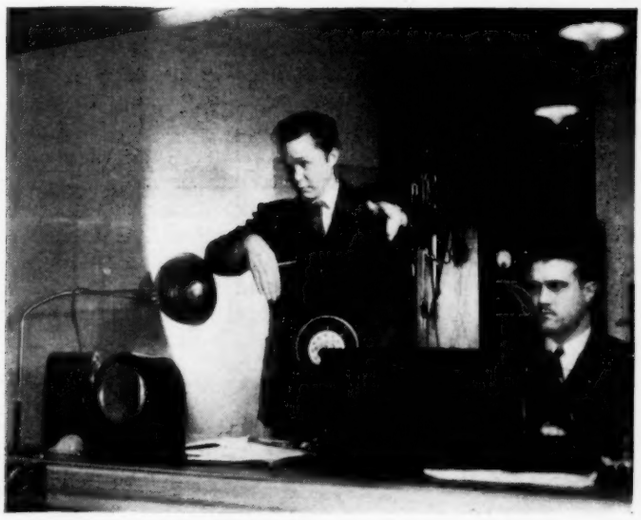
It seems to have become an old wives' superstition that "Men are such babies," when illness strikes them. True enough, most men are almost complete strangers to illness and are impatient with it when it attacks them. But wives would do well to remember that seldom does a man find an illness that is painful or bothersome enough to keep him away from his work, unless it is serious enough to demand immediate care. A headache, a sore throat, a backache may sound minor enough, but it isn't so funny when these small ailments turn into serious complaints when they are allowed to go untreated. Quick sympathy, insistence that husbands stay home to recuperate when they show half an inclination to do so and immediate measures of treatment can prevent much suffering. Just sitting dressed around the house while the usual housekeeping goes on about him or while his wife is away playing bridge will do little to effect any cure and will serve only to make him more miserable than before. Rest in bed, a visit from the doctor, some concentrated nursing from a devoted wife and a day or two to himself usually fix most men up perfectly, if an illness is caught in the "symptom" stage.

Husbands as a class tend to work too hard. Not only do they work hard all day, but many of them bring work and worries home with them. Quietly, persistently, smilingly, it is the wife's job to try to show her husband that true efficiency in his work, the well-being of the family and his own health and success depend on a certain amount of leisure time when no thought of business is allowed to intrude. Grandma's day had a saying for it, "All work and no play makes Jack a dull boy." It may be added that it is likely to make him a dyspeptic also. By encouraging some regular participation in an outdoor sport or hobby, a wife has gone a long way toward insuring a fuller, healthier, happier life for her husband. Attendance at amusing plays and movies is another way to kill worry and give complete relaxation; while a congenial circle of friends will practically insure some pleasant leisure moments.

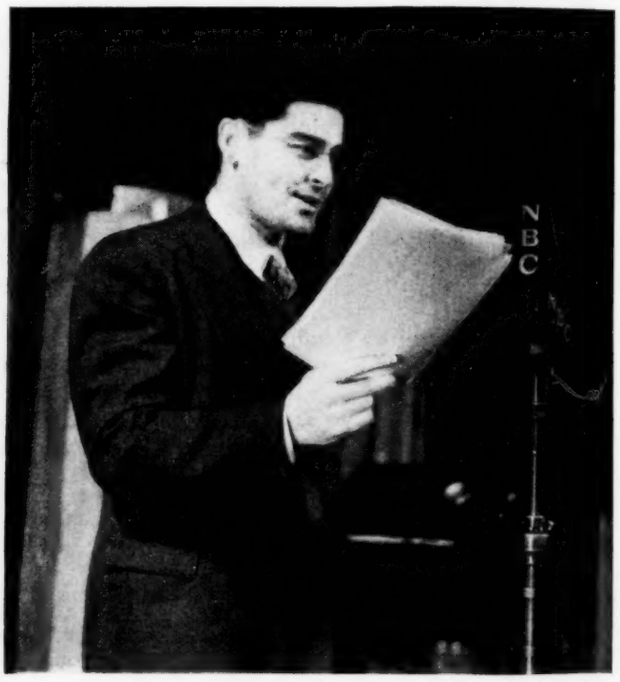
One thing we must watch out for is that we do not become oversolicitous, be-sure-to-wear-your-overshoes bores. Nothing more irritates any one or makes them more likely to break out into rash actions. Most, or all, of this outlined program can be carried out in such a way that there is no hint of the "watchful guardian" about it, since it consists mainly of planning and preparing the right type of meals, served at regular hours under attractive circumstances, making a yearly appointment with doctor and dentist, insisting on some leisure-time plans and participation in a well-liked sport and sympathetic care when small ills overtake the man of the house.

From The New Yorker

TO AMERICA'S SCHOOLS *Your Health!*



Gordon Hughes, the production manager for this program, gives the cue for one act to fade out as another comes in.



Louis Roen announces, "To America's Schools—Your Health!" and the program gets under way.

One of the scenes of action from a recent broadcast.

Stephen Deutch

Sound effects are often produced from records.

USING HEALTH KNOWLEDGE

THE last radio programs in this fourth series of dramatizations by the American Medical Association and the National Broadcasting Company, over stations of the Blue network, will be broadcast beginning May 31. The titles and dates are as follows:

May 31. Checking up on Health: Periodic health examination, what follows and why.

June 7. Vacations—Why and How: Making the vacation a real contribution to health and recreation.

June 14. Never Stop Learning: A new phase of life begins at commencement, and health contributes to success.

June 21. Answering Your Questions: What kind of health questions can and what kind cannot be answered without seeing the patient.

Checking up on Health. This program will deal with the value of the periodic health examination as a health check-up. The idea of the health check-up is based on the fact that little things go wrong without creating much disturbance at the time but possibly giving rise to more serious results later. Serious diseases frequently begin in a small way. If such abnormalities and early disease can be detected in time, they are much more amenable to treatment than if they are allowed to progress until they produce serious or even disabling symptoms. The health check-up should start at the beginning of life. And so for each individual, it really begins with his mother, is repeated several times during infancy, the preschool years, school age, adolescence, adult life, middle age and old age at intervals according to age and general state of health.

Vacations—Why and How. Making the vacation pay dividends in health, rest and recreation takes forethought, planning and preparation. The program will show the right kinds of vacations for different kinds of people and will point out the dangers and discomforts involved in doing the wrong things or doing the right things in the wrong way at the wrong time or without proper preparations. The program will endeavor to show that it is possible to have a safe, sane and healthy vacation and still have a good time; in fact, it will show that a good time is impossible without proper precautions.

Never Stop Learning. Although most persons stop going to school when they have finished high school, others get only as far as the eighth grade. Even those who go through college finish their formal schooling fairly early in life. Yet science goes marching on. Persons who do not keep on learning when they cease going to school will soon be far behind. There are many ways in which health knowledge can be obtained by persons who are no longer in school. They can get it from books, magazines, newspapers, radio and from speakers who appear in their communities. It is important for the adult learner to remember that not all persons who presume to teach are reliable. There are definite ways in which unreliability can be recognized, and there are certain sources from which the listener or the reader can obtain confirmation of claims which have been made and about which he is in doubt. This program will endeavor to show in a general way what are the reliable and authentic sources of health information available to those who no longer attend school.

Answering Your Questions. Every year the American Medical Association answers thousands of questions concerning health. These questions reveal what the American people are thinking about health, and they also bring to light many interesting points of view, superstitions, false beliefs and unfortunate attitudes toward health. Some of these are amusing; others are tragic. This program will deal with a few of the most common questions received by the American Medical Association, and special emphasis will be placed on the fact that there are certain types of questions that cannot be answered by correspondence or through a question box. Questions relating to diagnosis or to treatment cannot be answered without seeing and examining the patient, and therefore no one can answer such questions, except the doctor who has had an opportunity to have a personal knowledge of the condition of the patient.

Until Next Fall—

The American Medical Association and the National Broadcasting Company will be back on the air next fall with a new series of health programs. We cannot tell now just what the character of these programs will be. Last month we asked our radio listeners to write to us, and what we hear will have much to do with the kind of program we will plan for you in the fall. Your interest and friendly comments have helped us greatly in producing the kind of a program you could enjoy and use.

If you have not already written us, please do so now. Tell us what you like about our program and what you don't like. Tell us what you would like to hear next year.

W. W. BAUER, M.D.

Medical News

OF THE MONTH

Cooling Public Buildings

The practice of cooling public buildings to 80 F. or less in hot weather appears to be a distinct menace to the health of susceptible persons who expose themselves to contrasts in temperature, *The Journal* of the American Medical Association said recently.

"In warm summer weather," *The Journal* explained, "an indoor temperature of 80 F., or even 85 F., with low humidity is comfortable and desirable, from the standpoint of health, because the human organism becomes adapted to heat and cannot stand sudden drops in temperature, especially when the body surfaces are wet with perspiration."

Thermometers for recording room temperatures usually should be placed 36 inches above the floor and at least 3 feet away from the exposed walls. In rooms for the aged it is preferable to record the temperature at knee-height level, 18 inches above the floor.

Sense of Taste

Taste is a regressive sense in man, as he tastes only with his tongue while some animals, for example, fish, taste with their whole body, according to a paper by Dr. Harald Tangl, lecturer at the University of Budapest, recently summarized in *The Journal* of the American Medical Association by its regular Budapest correspondent.

"An infant tastes with the middle part of his tongue," the report said, "and an adult determines with the sides of his tongue whether food is pleasing or not. The whale has very few taste buds and gulps its food so quickly that it does not bother about the taste. Among horned cattle, taste is important, and they scrupulously select the grasses they like. The cow has about 15,000 taste buds, the antelope 50,000 and man 3,000.

"We know four distinct tastes: sweet, salty, bitter and sour. The sweet taste is perceived on the tongue the quickest, because the buds reacting on sweets are located at the tip of the tongue; then comes salty and then sour taste. Bitter things are tasted at the back of the tongue.

"Taste can be regulated. Warm coffee requires less sugar than cold, because warmth is a stimulant to the taste buds. However much sugar is put into ice cream it will not seem too sweet, because when cooled the taste buds scarcely function. If the tongue is rubbed with ice, one fails to perceive different tastes, a good method in taking bitter drugs. Taste is such a fine sense that it cannot be overtaken by chemical procedures. The taste can be trained. Tea tasters are able to tell the place of origin of a tea after a single tasting. Wine tasters can tell from where a certain variety of wine came and also whether the grapes from which it was made grew in a sunny or a shady field."

Immediate Treatment of Wounds

Many functional disabilities resulting from scars could be avoided by foresight in immediate treatment of wounds, Ralph M. Carter, M.D., Green Bay, Wis., points out in a recent issue of the *Wisconsin Medical Journal*.

The possibility that such disability may result always should be considered when a wound is being treated. Dr. Carter urges the promotion of rapid, clean healing by every means possible. Splints and plasters should be used when indicated, and skin grafting should not be looked on as a measure of last resort.

Scars involving tubular structures, such as the esophagus, intestine, ureter and urethra, may occasion disturbances of normal physiology to a degree out of all proportion to the severity of the disturbances from the original injury. Whether the scar is exposed to continual irritation may be the determining factor in producing disability.

The tendency to contraction as scars become older exerts a deleterious influence in some circumstances. The consistency of the scar is also of importance. Occasionally scar tissue is seen which never becomes hardened, remaining thin and fragile, pinkish in color and extremely sensitive and breaking down on the slightest irritation.

First Pregnancies

If women in their first pregnancies are especially likely to develop toxemia (poisoning), this may be due more to their youth than to the fact that they are pregnant for the first time, it is suggested in the *American Journal of Obstetrics and Gynecology*.

This possibility occurred to E. D. Colvin, M.D., and R. A. Bartholomew, M.D., Atlanta, Ga., in view of the unusually high percentage, among all cases of toxemia of pregnancy in one hospital, of women not more than 18 years of age who were pregnant for the first time.

To test their theory, they made a study of sixty-two Negro adolescents pregnant for the first time. Twenty-four became toxic: One had premature detachment of the placenta, three had eclampsia (toxemia characterized by intermittent convulsions followed by progressive coma), eleven had preeclampsia (characterized by nausea, vomiting, headache, labored breathing and albumin in the urine). One hundred women between 25 and 30 years of age, also pregnant for the first time, were studied for purposes of comparison. Twenty-one of these developed toxemia, but there were no cases of eclampsia or premature detachment of the placenta.

Value of Artificial Fever

Although the treatment of more than fifty diseases by means of artificial fever has been tried, its value has been proved in only about ten diseases, Frank H. Krusen, M.D., and Earl C. Elkins, M.D., Rochester, Minn., reported recently in *The Journal* of the American Medical Association.